Previews Of Amiga And Atari 520ST

FREE

California's Computer Magazine

AUG. 15 - SEPT. 12

MICROTIMES

KEVIN JENKINS OF HERCULES COMPUTER TECHNOLOGY

PC Faire Special:
Product Reviews, Buyer's Guide

Lee Felsenstein On Berkeley's Community Memory

Intech Preview:
Solutions For Business Problems

WINNING IN IBM'S WORLD
Hercules Computer Technology

ServiceWOR

SERVICE A

"Some companies service the land,
WE WILL SERVICE YOUR WORLD."

SERVING THE FORTUNE 1,000 MARKET

- ☑ On Site Service
- ☑ Loaner Policy
- ☑ IBM & ITT Trained Technicians
- ☑ Same Day Fast Service
- ☑ Disk Drive Alignment
- ☑ Warranty Service

ITT, DIABLO, EPSON, TALLGRASS, OKIDATA, BROTHER, JUKI AND MORE

☑ There's a **World** of On-Site

WE GIVE YOU THE BEST
ADVICE, SELECTION, PRICE & SERVICE

LD DELIVERS
ND HARDWARE

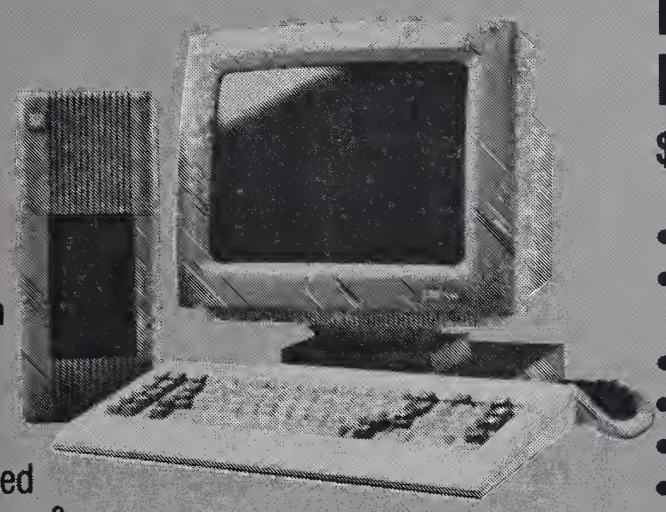
ServiceWORLD Announces the ITT Extra PC's at the Best Prices with the Best Service in Northern California

Two Complete Systems Two Low Prices

SYSTEM 1
ITT Extra PC Model III 256K

$2,395.00 Originally $3,895.00

- 1 360K floppy drive
- 1 10MB fixed disk
- 1 swivel stand amber or green monochrome monitor
- 1 ITT Dos 2.1 and Basic
- IBM XT compatibility
- Serial and parallel ports included
- On-site service contract, delivery & installation add $300



SYSTEM 2
ITT Extra PC Model II 256K

$1,495.00 Originally $2,495.00

- 2 360K floppy disk drives
- 1 swivel stand amber or green monochrome monitor
- 1 ITT Dos 2.1 and Basic
- IBM PC compatibility
- Serial and parallel ports included
- On-site service contract, delivery & installation add $200

Special 8087 Math Co-Processor

$129.00

$99.00 with ITT System purchase

Call and make an appointment to see the ITT PC's today.
In San Francisco only—exclusive ITT showroom at ServiceWORLD Inc.

Service at ServiceWORLD Inc.

55 FRANCISCO STREET, SECOND FLOOR
SAN FRANCISCO, CALIFORNIA 94133

415-788-6580

MICROTIMES

Cover and contents photo: Pat Johnson Studios/Billy Douglas

President Kevin Jenkins of Hercules Computer Technologies, seen here with one of his silent partners, explains the principles behind his company's success.

COVER STORY

26 Winning In IBM's World:
Hercules Computer Technology

By Mary Eisenhart

Hercules' graphics cards for IBM PCs and compatibles have become an industry standard. President and co-founder Kevin Jenkins explains that you *can* go up against Big Blue and come out a winner.

DEPARTMENTS

8 Letters

10 Edit Mode

Don Hamilton advises thinking through what you need the machine to do before you get your first office computer so that your first computer isn't your last.

12 Business Software Reviews

PHOTO: MATT HERRON

"Hackers," a video documentary of the pioneers of the computer revolution, is coming to the TV screen this month. (See page 22)

22 Newsreels

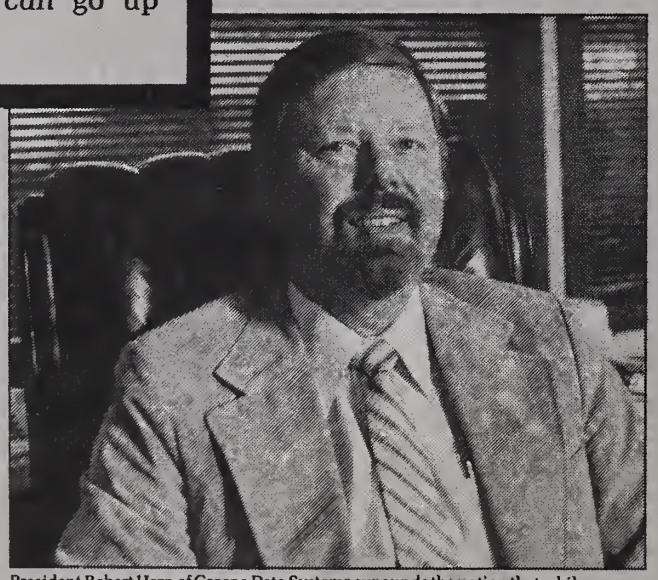
80 Reviews

92 Retail/Service News

94 User Group Network

100 Classifieds

PHOTO: ANN SUMMA



President Robert Harp of Corona Data Systems expounds the notion that while MS-DOS capability is a good idea, cloning IBM hardware isn't.

PC FAIRE SPECIAL

42 Improving On IBM's Standard? The Life And Times Of Corona Data Systems

By Jeff Spurrier

A manufacturer of "IBM Compatibles"explains the importance of breaking new ground while maintaining compatibility with the operating system IBM has established so successfully.

58 PC Faire Preview

Schedule of conferences at the 3rd Personal Computer Faire, September 5 – 7 in San Francisco.

76 Buyers Guide

Some new PC-related products for a variety of applications.

FEATURES

34 INTECH Preview

By J.S. Taub

INTECH, the Integrated Information Technology Conference and Exposition, will be featuring real world solutions to real world problems. Some of INTECH's exhibitors preview their products, designed to deal with the business community's office automation needs.

46 The Atari 520ST: First Impressions

By Mike Fulton

A report on the "Jackintosh," from a user who bought one of the first machines.

48 Lee Felsenstein: Building The Electronic Neighborhood

By Vanessa Schnatmeier

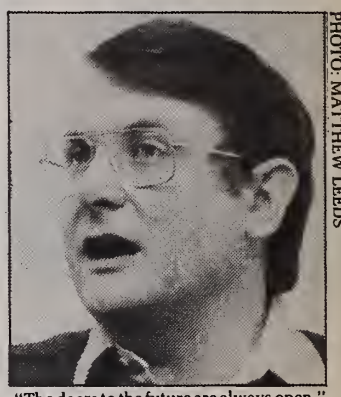
Hacker, Osborne I designer, and freedom-of-information advocate Felsenstein holds forth on Berkeley's Community Memory, the Hacker's Mac, and related topics.

60 Preview Of Commodore's Amiga

By Matthew Leeds

Says Commodore-columnist Leeds, "Commodore has come up with a winner."

PHOTO: MATTHEW LEEDS



"The doors to the future are always open," says Felsenstein, "but you have to go through the door."

Commodore's Amiga has arrived, with impressive capabilities and a host of supporting products.

COLUMNS

64 CP/M

By Robert D. Athey, Jr.

Results of a Bay Area survey showing who's using CP/M computers, for what applications.

66 Macintosh

By Barbara Leone

If you've been waiting for *Jazz*, maybe you should wait a little longer for *Excel*.

68 Commodore

By Matthew Leeds

A look at various new products for the C64.

70 Telecommunications

By Brock N. Meeks

Inaugurating a new column on the revolution in global communications, and what it means to real people in the real world.

72 Data Base Management

By Bill Amatneek

Pointers on indexing *dBase III* files.

74 Small Business And Computers

By L.K. Engelhart

How to select a system for automating your office.

SUPER SAVER SPECIALS

KEYTRONICS KEYBOARD #5151 $199.99

APPLE//e 80 COLUMN W/64K MADE IN USA $59.95

D-BASE III IBM $369.95

AUTOMATIC PRINTER SWITCH FOR IBM PC $119.95

NORTON UTILITIES 3.0 $89.99

COPY II PLUS APL/IBM/MAC $29.95

SOFTWARE

APPLE

LIST HANDLER	$ 54.95
SPELL HANDER	$ 42.95
WORD HANDLER	$ 54.95
HANDLERS PACKAGE	$116.98
MAGIC OFFICE	$212.95
MAGICALC	$ 99.00
MAGIC WINDOW 11	$105.95
ALPHA PLOT	$ 26.25
DOS BOSS UTILITY	$ 15.95
DOUBLE TAKE	$ 23.07
UTILITY CITY	$ 19.95
APPLE MECHANIC	$ 19.95
PRONTO DOS	$ 19.95
TIP DISK UTILITY	$ 13.95
BEAGLE BAG	$ 19.95
BEAGLE BASIC	$ 23.07
SILICON SALAD	$ 16.95
TURBO TUTOR	$ 23.07
TURBO PASCAL (Z80)	$ 36.27
TURBO TOOL BOX	$ 36.27
BANK ST FILER	$ 45.95
BANK ST MAILER	$ 45.95
BANK ST SPELLER	$ 45.95
BANK ST WRITER	$ 45.95
DAZZLE DRAW	$ 39.95
PRINT SHOP	$ 32.97
SIDE WAYS	$ 39.60
MIND PROBER	$ 29.97
SALES EDGE	$165.95
THINK TANK	$ 99.00
COPY 11 PLUS	$ 29.95
MULTIPLAN	$ 79.95
APPLE SOFT COMPLIER	$119.95
WORD STAR	$231.95
WORDSTAR/MAIL	$324.95
MULTIPLAN(Z80)	$134.95
TYPING TUTOR 11	$ 27.95
DOLLARS & SENSE//e	$ 79.95
DOLLARS & SENSE//c	$ 84.95
SENSIBLE SPELLER	$ 86.95

IBM

HOME ACCOUNTANT PLUS	$ 99.95
FRAMEWORK	$439.95
DBASE 11 (msdos)	$339.95
DBASE 111	$379.95
SIDEKICK	$ 39.95
BANK ST WRITER	$ 49.95
PRINT SHOP	$ 39.95
C COMPILER (PCDOS)	$239.95
CONCURRENT (PCDOS)	$199.95
SIDEWAYS	$ 39.95
MIND PROBER	$ 29.95
MANAGEMENT EDGE	$169.95
SALES EDGE	$169.95
PC PAINTBRUSH	$ 94.95
PC PAINT BRUSH w/mouse	$199.99
THINK TANK	$129.95
LOTUS 123 VER 1.A	$329.95
SYMPHONY	$459.95
MAIN ST FILER	$ 69.95
WORDSTAR 2000	$324.95
WORDSTAR 2000+	$394.95
R-BASE 4000	$324.95
R-BASE 5000	$429.95
MICROSOFT CHART	$169.95
MICROSOFT PROJECT	$169.95
MS WORD (PSDOS)	$249.95
DOLLARS & SENSE W/FORECAST	$129.95
MULTIMATE	$319.95
NORTON UTILITES (3.0PC/MSDOS)	$ 69.95

MACINTOSH

HOME ACCOUNTANT	$ 68.95
MACLION	$261.95
SONG PAINTER	$ 49.95
PC TO MAC & BACK	$119.95
SMARTCOM II	$119.95
HIPPO-C LEVEL 1	$103.00
HIPPO LEVEL II	$275.96
THINK TANK 128K	$ 99.99
THINK TANK 512K	$169.95
JAZZ	$399.99
MICROSOFT CHART	$ 89.00
MICROSOFT FILE	$125.95
MULTIPLAN	$125.95
MICROSOFT BASIC	$100.95
TUPING TUTOR 11	$ 34.95
MIND PROBER	$ 29.00
DOLLARS & SENSE	$129.95
COPY 11 PLUS	$ 32.95
ONMIS 2	$219.95
ONMIS 3	$341.95
DB MASTER	$113.95
ELECTRONIC CHECKBOOK	$ 54.95

Double Density, Double Sided 1/2 HT Drive for Apple by Remington Rand.
$299.95

ACCOUNTING APPLE

CONTINENTAL GL/AP/AR	$169.95
BPI ANY MODUAL	$269.95
PFS FILE/REPORT/GRAPH/ WRITE	$ 84.95ea

MACINTOSH

CHANG AP/AR/GL	$229.95
MEGA FILER	$129.95
MEGA FORM	$199.95
MEGA MERGE	$ 84.95

IBM

BPI AR/AP/GL	$399.99
RAGES TO RICHES GL/AP/AR/	$ 89.95
ST OF ART AP/AR/ INVEN/PAY/GL	$389.95

COMMUNICATIONS SOFTWARE

ASC11 EXPRESS (APL)	$ 89.00
HAYES TERMINAL PGM	$ 64.95
HAYES SMARTCOM1 (APL)	$ 79.95
HAYES SMARTCOM2(IBM)	$ 99.95
MULTILINK (IBM)	$339.05
COMPUSERVE	$ 28.95

MODEMS

SMARTMODEM 1200	$398.95
SMARTMODEM 1200B	$359.95
MICROMODEM //E	$189.95
PROMETHEUS 1200	$294.95
PROMETHEUS 1200A (PLUG IN)	$298.95
PROMETHEUS 1200B IBM NO SFT	$239.95
AUTO DIAL/ANSWER PROMETHEUS MAC/PAC	$339.95
PROMETHEUS 1200B W/SFT	$288.95
ANCHOR MARK 1	$ 89.00
ANCHOR MARK XRS232	$119.95
MARK 1200	$269.95
VOLKSMODEM 1200	$199.95

MONITORS

M-O AMBER 12"	$ 99.95
GREEN 12"	$ 99.95
TAXAN GREEN	$125.95
TAXAN AMBER	$137.95
TAXAN HI/RES RGB	$495.95
SAKATA COMPOSITE COLOR 13"	$249.95
POLO HI/RES RGB IBM	$359.95
NEC. RGB	$299.95

Print Shop
$32.95

Apple Power Supply
$ 57.95

S.G.C. is pleased to announce our Electronic Shopping Bulletin Board Call 415-793-8799 300/1200 Baud 24 hours a day

Modem Special Prometheus 1200 Option Processor w/64K buffer Alphanumeric Display
only $479.95

MacIntosh Upgrades 128-512K 90 Day Guarantee
$249.95

O-K Ram Card (no RAMS)
$79.95

Mac Tote
$69.95

MacIntosh External Drive
$299.95

IBM ½ HT Drives
$119.95

PRINTERS

STAR MICRONICS SUPPORTS FULL LINE GRAPHICS
TRACTION & FRICTION FEED INCLUDED
SWITCH SELECTABLE FOR NLQ 30/40/50 CPS
OPTIONAL SERIAL INTERFACE S-M

SD10 2K/160 CPS	$369.95
SD15 16K/160 CPS	$489.95
SG10 2K/120 CPS	$259.95
SG15 16K/120 CPS	$419.95
SR10 2K/200 CPS	$539.95
SR15 16K/200 CPS	$649.95

PANASONIC BOTH TRACTION & FRICTION FEED
ONE YEAR GUARANTEE
3 MILLION CHARACTER RIBBON/ REINKABLE TO ADDITIONAL 3M/ CHAR

P1090 10" 100 CPS	$239.95
P1091 10" 120 CPS	$299.95
P1092 10" 180 CPS	$439.95
P1093 15" 160 CPS	$619.95
BROTHER LETTER QUALITY	
BROTHER HR-15	$349.95
BROTHER HR-25	$630.00
JUKI 6100 LQ	$399.95

ACCESSORIES

MACH 11 JOY STICK	$ 34.95
MACH 111 JOYSTICK FIRE BUTTON	$ 39.95
SAVER FAN (SURGEPROTECTED)	$ 35.95
FLIP & FILE-HOLDS 50	$ 17.95
DISK BANK HOLDS 50	$ 10.95
MOUSE MOVER (MAC)	$ 24.95
SURGE SUPPRESSOR 4 PLUGS	$ 42.95
5-¼ DISK DRIVE CLEANER	$ 17.95
RF MODULATOR (APL)	$ 17.95
SWIVEL MONITOR STAND 11"	$ 12.95
SWIVEL MONITOR STAND 14"	$ 17.95

MEDIA

SONY 3½ (10)	$ 35.95
MAXELL 3½ (10)	$ 35.95
CENTRON 5¼ (10)	$ 15.95
GENERIC (10)	$ 13.95

IBM 132W Switching Power Supply
$145.00

Microfazer Computer Printer Buffer
$175.95

HARDWARE

APPLE

ALS CP/M CARD W64K	$253 00
ADD RAM (16K)	$ 59 95
PRINTER MATE	$ 49 95
DISPATCHER	$ 89.95
Z-ENGINE	$119.95
SMARTERM 11	$119.00
VIDEO TERM	$215.00
ULTRA TERM	$289.00
SATERN 128K	$329.95
80 COL/64K	$ 59.95
GRAPPLER PLUS	$119.00
TAXAN RGB INTERFACE	$ 99.00
APRICORN SERIAL CARD	$ 88.00
VIEW MAX 80 COL	$129.00
RAMWORKS 128K	$199.00
RAMWORKS 256K	$329 00
80COL W 64K& RGB	$179.95
V-COLOR 7 RGB	$112.00
PRINT IT	$ 99.95
FLOPPY CONTROLLER	$ 59.95
PRINTER INTERFACE/ CABLE	$ 44.95
SERIAL CARD	$ 69.95

AST Multi I/O
$109

VERSACARD — Four in One:
SERIAL • PARALLEL • REAL TIME CLOCK CALENDAR • BSR PORT
SPECIAL
$159.95

AST Ram Stak
$559.95

IBM

MEGAPAK W/256K	$499.95
MEGAPAK W/128K	$219.95
MEGAPAK W/256K CLK/SER	$499.95
MEGAPAK W/64K CLK/SER	$289.95
MEGAPLUS II PARALLEL KIT	$ 39.95
MEGAPLUS II SERIAL KIT	$ 39.95
SIX PAK PLUS GAME PORT	$ 39.95
SIX PAK PLUS W/64K RAM	$242.95
MONOGRAPH W/TEXT/ GRAPHICS	$459.95
O-K RAM CARD	$ 79.00

DISK DRIVES

FOR APL //C,//e,// +	$159.95
FOR IBM INTERNAL ½ HT	$120.95
MACINTOSH EXTERNAL	$299.95
MICROSCIENCE 10 MEG WITH CONTROLER IBM	$849.95
10 MEG FOR APPLE W/CTRL	$799.00

GAMES

QUESTRON	$ 39.95
GERMANY 1985	$ 39.95
NORTH ALANTIC 86	$ 39.95
GEOPOLITIQUE	$ 29.95
WAR IN RUSSIA	$ 69.95
RFD 1985	$ 29.95
KNIGHTS OF THE DESERT	$ 29.95
FLIGHT SIMULATOR II	$ 39.95
PINBALL	$ 29.95
MILLIONAIRE	$ 39.95
BARON	$ 39.95
TYCOON	$ 39.95
ZORK 1,2,3	$ 29.95

GAMES FOR MAC

DEADLINE	$ 44.95
ENHANCER	$ 31.95
INFIDEL	$ 39.95
PLANTFALL	$ 31.95
SORCERER	$ 39.95
STARCROSS	$ 44.95
SUSPENDED	$ 44.95
WITNESS	$ 31.95
ZORK 1	$ 31.95
ZORK 2	$ 39.95
ZORK 3	$ 39.95

COMPUTER GOODS
est 1981

the mail order specialists

700 Mowry Ave., Fremont, CA 94536

R-M-A & Inquiries: **415-791-7091**

Orders Only: **800-523-2382** Orders in CA: **800-423-4415**

PO's welcome from qualified institutions.
NO SURCHARGE ON CREDIT CARD ORDERS

We do not charge bank card until we ship. Store prices slightly higher. P.O.'s welcome from qualified institutions. $7 Shipping charges for all shipments, monitors & printers extra. All returns must have an RMA number. To order, call 415-791-7091

Terms: All orders shipped UPS ground Air extra Calif residents add 6½% sales tax Allow 120 days to clear personal check Prices subject to change without notice All goods are new, include warranty and are guaranteed to work Due to low prices and our assurance that you will get new, unused products—**all sales are final.** We do not guarantee compatibility Call before returning goods for repair or replacement. All returns subject to 15% restocking fee

AD #14

UPS Shipping Daily

SAVE UP TO 50%

GRAND OPENING SALE

IBM PC/XT FULLY COMPATIBLE SYSTEM
• 8088 CPU with 8087 Optionol • B10S, 256k On Boord • 2 Teoc FD-558 Slim Drives w/Contraller • Colar Grophic Cord • 130W Power Supply • PC/XT Fully Compotible Keyboard

ONLY $1099.00

512k Ram Card 0k, Expandable to 512k	$75.00
Parallel Printer Card	39.00
Game Adapter Handle & Joysticks	35.00
IBM PC/XT Fully Compatible Mother Bare Board	49.00
Monochrome Graphic Printer Bare Board	34.00
Color Graphic Bare Board	24.00
384k Multifunction Bare Board	34.00
Disk Controller Bare Board	24.00
Keyboard Fully IBM Compatible, LED on NUM & Caps Lock Keys	89.00
Teac FD-55B Slim Drive DS/DD, 360k	99.00
Panasonic JA551-2 Slim Drive	95.00
10MB Hard Drive	Call
20MB Hard Drive	Call
PC/AT Power Supply	Call
4164 64k Dram, Set of 9	10.90
Joystick for IBM & Apple, 2 cables included	25.00
Printer Cable	11.00
Speaker	3.50
Disk Box, Holds 50 Disks	11.00
Disk Box, Holds 100 Disks, with lockable lid	17.00

90-day warranty on all products
Dealers and OEM Welcome

WE OFFER LOW PRICE AND HIGH QUALITY

IBM XT FULLY COMPATIBLE MOTHER BOARD
8088 CPU with 8087 Optianol
With 810S • 8 I/O Slots
ak, Expondoble to 256k an Baord
Same Dimension As IBM PC/XT
$269.00

MONOCHROME GRAPHIC CARD
With Printer Part
80 x 25 Text Mode
720 x 348 Resolution
$155.00

COLOR GRAPHIC CARD
RGB & Composite 80 x 25 Text Mode
640 x 200 Resalutian
$109.00

MULTIFUNCTION BOARD
ak, Expandoble to 384k • Seriol/Parallel Part
Clock Colendor • Gome Adapter
Cables Included • Rom Disk, Spaaler
$145.00

FLIP-TOP CASE
8 Slat Back Panel
Maunting Brocket & Hordwore Included
Good far IBM PC/XT Mother Board & Pawer Supply
$79.00

130W POWER SUPPLY
Good Far PC/XT & Other PC/XT Compotible Side On-Off Switch
• 4 Drive Pawer Plugs
110/230 VAC Convertible
$109.00

FLOPPY DISK CONTROLLER
Standard DS/DD
Run 2 Internal & 2 External
With Cable
$75.00

TINMA COMPUTER
15131 Brookhurst Street Garden Grove, CA 92643
ORDER HOT LINE (714) 636-7060

STORE HOURS:
Man-Fri 9:00 AM - 6:00 PM
Sat 10:00 AM - 5:00 PM

master charge VISA Terms: Viso, M/C, Check, C.O.D.

No Service Charge On Credit Cards

IBM & IBM PC/XT are trademarks of International Business Machines

Hey Marin County!

COMPUTERS
SOFTWARE
PRINTERS

Western Computer ©

(Near UPS)
3095-Y Kerner Bl
San Rafael, CA
457-2256

Discount prices now available locally!

MICROTIMES
California's Computer Magazine

PUBLISHER/EDITOR Dennis Erokan

EDITORIAL

ASSISTANT EDITOR Mary Eisenhart

CONTRIBUTING EDITORS Bill Amatneek, Robert D. Athey, Jr., L.K. Engelhart, John Gresham, Matthew Leeds, Barbara Leone, Michael Markowitz, Brock Meeks, Jeff Spurrier

CONTRIBUTING WRITERS Jina Bacarr, Matthew Berry, Gordon Bruce, Bruce Cannelongo, Joe Celko, Larry Clark, Randy Dennis, Robin J. Dunitz, Jack Epstein, James Evans, Bennett Falk, Laurie Foster, Steve Foster, Carter George, Ken Goehner, Lion Goodman, Walter Grams, Dave Johnson, Rose Johnson, Benjamin Krepack, Michael Murphy, Doug Pencille, Pamela Pescara, Vanessa Schnatmeier, Ed Shurtleff, Karen M. Sullivan, Tim Tyler, Michael Wiesenberg

CONTRIBUTING PHOTOGRAPHERS Pat Johnson, Robert Matheu, Richard McCaffrey, Ann Summa, K. Gypsy Zaboroskie

EDITORIAL CONSULTANTS

EXECUTIVE EDITOR Don Hamilton
ASSOCIATE EDITORS Pat Hamilton, Kim Nelson

DESIGN

ART DIRECTOR Lee Ann Nelson

ASSISTANT ART DIRECTOR Jarice Kirkendoll

ART STAFF Elizabeth Fenimore, William Salit

CAMERA OPERATORS Michael Brewer, Elizabeth Rettig

TYPESETTING Image Factory, The Typesetting Shop

ADMINISTRATION

ASSOCIATE PUBLISHER Miles Hurwitz

ASSISTANT TO THE ASSOCIATE PUBLISHER Shelley Higgins

ACCOUNTING MANAGER Maggie Kelly

ACCOUNTING Greg Doza, Steven Engelfried

ADVERTISING

ADVERTISING DIRECTOR Joe Amadeo

ASSISTANT TO THE ADVERTISING DIRECTOR Carol Priest

ASSISTANT ADVERTISING DIRECTORS Jeff Rosenfield (Los Angeles), Chuck Stanley (San Francisco)

ADVERTISING & PROMOTION Barry Green, Bill Reefer, Carolyn Schwartz, Jane Shepherd

ADVERTISING ASSISTANTS Maria Beal (San Francisco), Crystal Sloan (Los Angeles), Deni St. Clair (Los Angeles)

DIRECT SALES Bea Doran

National Rep.: Carol Oppenheimer

DISTRIBUTION

PRODUCTION & DISTRIBUTION MANAGER John Erokan

ASSISTANT TRAFFIC MANAGER Noel Perry

DISTRIBUTION STAFF Danny Fernandez, Bruce A. Fraser, Frank Grygus, Ron Hershewe, Art Holland, Eliot Kleinberg (asst. L.A.), Kirk Lanier, Ali Lexa, Rico Lozano, Mike Nellany, Joseph Rafalo, Bill Smith
Racks by Free Distribution

MICROTIMES FOUNDERS Dennis Erokan, Don Hamilton, Pat Hamilton

This Vol. 2. No. 8. August 1985, Whole No. 12 MicroTimes, California's Computer Magazine, is published by BAM Publications, Inc., 5951 Canning St., Oakland, CA 94609. Phone (415) 652-3810. Los Angeles Office, 1800 N. Highland, Suite 220, Hollywood, CA 90028. Phone (213) 467-7878.
MicroTimes™ is © 1985 by BAM Publications, Inc. Subscriptions rate: 12 issues, $12. All rights reserved. Reproduction in whole or in part without permission of Publisher is strictly prohibited. Unsolicited material is gratefully accepted, but we can't be responsible for returning it unless it is accompanied by a stamped, self-addressed envelope. The staff and management of MicroTimes do not advocate or encourage the use of any product or service advertised herein for illegal purposes.

1000'S TO CHOOSE FROM • 1000'S IN STOCK!

Join Our Savings Club*

EVERYTHING FOR THE OFFICE • WE BEAT EVERYBODY • ONE STOP SHOPPING

YOU MUST BRING IN AD TO GET THESE PRICES • WE TAKE TRADE-INS *Extra Savings on Future Purchases when buying today.

MicroTimes Special
ROYAL Printing Calculators
$39.95 Value
$9.88!
Mention MicroTimes W/Purchase

DAISYWHEEL TYPEWRITERS INTERFACEABLE

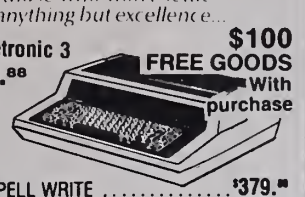
Canon Typestar 5	149.88
Sharp PA1000	229.88
Canon Typestar 6	199.88
TOWA EX77	399.88
Swintec 1146CMP	539.88
100's of miscellaneous electric typewriters from	69.88

MUST SELL - NEW, USED, DEMOS

SCM SMITH-CORONA

For those who won't settle for anything but excellence...

Typetronic 3 499.88



$100 FREE GOODS With purchase

SPELL WRITE	$379.88
UltraSonic 300	299.88
SCM 400	349.88

ROYAL Typewriters

Beta 200 Electronic	159.88
Beta 2001	229.88
Beta 8100	349.88
Beta 8200	389.88
410	489.88
Beta 9000	469.98

IBM®

IBM

Selectric I	199.88
Selectric II	399.88
Selectric III New	789.88

OLYMPIA

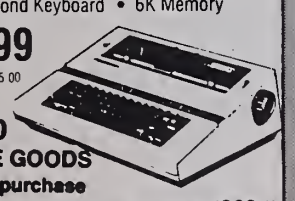
Compact 2 369.88

Orbit P (15 features)	199.88
Report Electronic	319.88
Orbit XP (parallel int)	279.88
Compact (serial int)	389.88
Orbit/Int	499.88

SILVER-REED

The EX-43
- 10,12,15 Pitch
- Interfaceable
- Second Keyboard
- 6K Memory

$299 was $495.00



$100 FREE GOODS With purchase

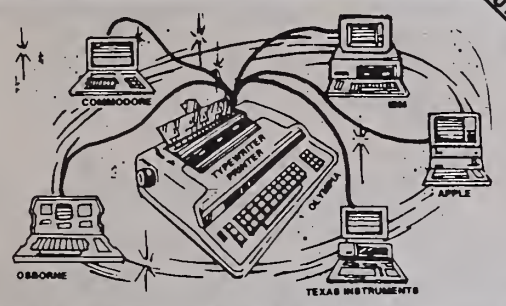
EX 44/Int. $369.88

brother

OTHERS

CE25	199.88
CE50	269.88
CE65 deluxe	349.88
CE70/memory	479.88
EM250	879.88

CALL FOR OTHER MODELS



Computer Ready Typewriter/Printer with Interface

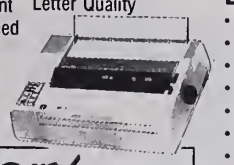
Sharp/Int	339.88	Olympia Orbit/Int	299.88
Brother 50/Int	419.88	TOWA EX77/Int	399.88
Brother 60/Int	459.88	Smith Corona	
Brother 65/Int	449.88	Typetronic 3/Int	599.88
Olivetti P-30/Int	299.88	Royal 8200/Int	469.88
SCM 300/Int	399.88	IBM Selectric II/Int	699.88
Olivetti P41/Int	379.88	Silver Reed EX44/Int	$369.88
		Olympia Serial/Int	389.88

We have many others, need just the Interface? Call.

HOT PRINTERS! (DOT MATRIX)

OLYMPIA

Olympia Electronic Compact N.P.
BI/DIR, 165 CPS Cent Letter Quality
2K Buffer Tractor Feed
Optional Serial
Super Quiet Was 596



299.88

STAR

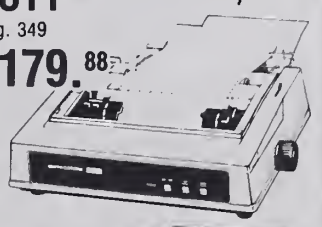
Call for more ★ Stars ★

219.88 STAR SG-10

SD 15 $459.88

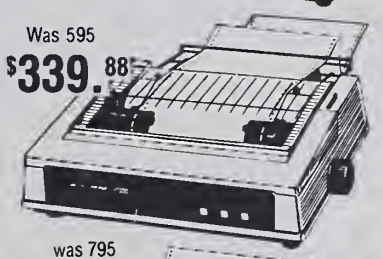
SCM SMITH-CORONA HEAVY DUTY

D-100 Dot Matrix Printer Reg. 349 $179.88



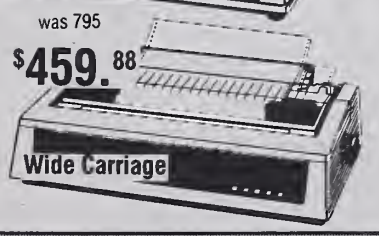
- Speed: 120 characters per second
- Friction feed/tractor feed standard
- Centronics compatible paralleled interface
- Graphics capability
- Fanfold or single sheets; (roll-optional)
- Six pitches
- Prop. spacing

D-200 Dot Matrix Printer Was 595 $339.88
Near Letter Quality



- Dual Interface
- 2K Buffer
- Plus All Features of the D-100
- Tractor Feed

D-300 Dot Matrix Printer was 795 $459.88
Near Letter Quality



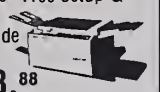
- 140 CPS Print Rate
- 6 Pitches
- Built-In Dual Interface
- All Features of D-100 & D-200
- Friction/Tractor Feed

Wide Carriage

CALL FOR OTHER MODELS

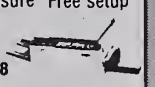
COPIERS

Sharp 760
Auto Exposure Free setup & 8,000 copies
Reduction mode
Was 2595



Now 1588.88

Sharp 756
Automatic Exposure Free setup & 8,000 copies
Was 1795



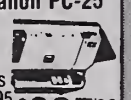
Now 999.88

Canon PC-10 Was 999 Now 489.88

Canon PC-20

Was Now 1095 $679.88

Canon PC-25



Was 1395 Now $925.88

Specials on cartridges & accessories

CALCULATORS

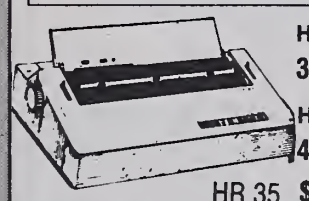
Here are a few examples:

Heavy Duty Olympia	19.88
Sharp PD 11611	29.88
Royal 1017	49.88
Sharp 1625	59.88
Sharp 1197	69.88
Sanyo 2250	79.88
Olympia Deluxe	99.88
Sharp 2604	134.88
Victor A-50	199.88

Many Others. Ask About Extra 10% Off.

HOT PRINTERS! (DAISYWHEEL)

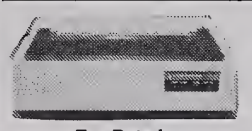
Brother or Dynax



HR 15 LX 329.88
HR 25 499.88
HR 35 $699.88

Twin Writer 5 879.88
- Optional Keyboard, Tractor, & Cutsheet Feeder

SILVER-REED



EX 400 Daisywheel Deluxe 219.88

Top Rated

OLYMPIA

Olympia 102
- Heavy duty daisywheel
- 3-Pitch & Proportion
- 20 CPS
- 2K & 4K
- 17" carriage
- Par & Ser Interface
- Options-tractor feed & Single page feed was 1099

Now $349.88 WIDE CARRIAGE

Olympia 100
- Hot!
- Daisy Wheel
- Comes in pica
- 16 CPS
- Par. interface
- Heavy duty
- Compact RO D/W

$195.88

OTHER PRINTERS

Smith Corona L-1000	225.88	Olympia RO	299.88
Epson LX-80	219.88	Okidata 192P	369.88
Epson FX-80	339.88	Okidata 193P	529.88
Juki 6300	689.88	Amdek 5025	429.88
Qume	All Models	HP	All Models
Panasonic	All Models	Toshiba 1340	559.88
NEC P3	799.88	Toshiba P351	1169.88

CALL FOR OTHER MODELS

CORPORATE DISCOUNTS

THE COMPUTER INTERFACE SPECIALISTS

Specializing in dealer, department store, mail order and premium sale. All offers limited. Call or come in for details. Cash, credit card, check or money order. We ship UPS—add $5.00 for handling.

PHONE ORDERS WELCOME master charge VISA

OEM INC
323 Allerton Ave.
S. San Francisco, CA 94080
(415) 872-6668
HOURS
M-F 9-5 Sat 10-5 Thurs til 9

ICI INC
Mary El Center 984 W. El Camino
Real @ Mary Sunnyvale, CA
(408) 730-1184
HOURS
M-F 9-6 Sat 10-5 Thurs til 9

GOLDEN GATE COMPUTER EXPO

A Marketplace for the Buyer and Seller in the Microcomputer Industry.

Oakland Coliseum
Oakland, CA.
September 28-29, 1985
10 am to 5 pm Daily
Admission $5.00.

From the novice to the professional, whether you're new in the microcomputer field or an old hand, this show is for you!

New Hardware
New Software
New Innovations
Service
Repairs
Training
Educational
Peripherals

And of course:
Bargains, Bargains, Bargains
Show Specials
Closeouts
Discounted Items
Overstocks

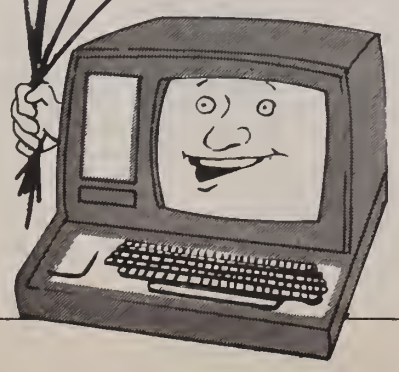
Door Prizes Each Day
1st Drawing—$500.00
2nd Drawing—$250.00
3rd Drawing—$100.00
Towards Purchases From Any Show Exhibitor

Featuring:
Personal Computers
Printers
Business Computers
Disk Drives
All Types of Software
Plotters
Joy Sticks
Print Wheels
Books
Diskettes
Modems
Printer Ribbons
Computer Hobbyist Items
And Much Much More!!!

FLASH!!!
Preregistration
- $1.00 off the admission price of $5.00
- No waiting in line at the show
- Early admission ½ hour before official opening — 9:30 a.m. instead of 10:00.
- Coupon will serve as entry form for door prize drawings

Use coupon below

Tickets also available at all BASS ticket outlets



Exhibitor Space
For exhibitor space information, call
(800) 262-4245 (in CA)
(800) 421-5744 (outside CA)
When you hear "Identification number, please," dial the word "E-X-H-I-B-I-T."
Or call **(415) 459-1998**
Or write **Golden Gate Shows, P.O. Box 1208, Ross, CA 94957**

Mail Order Preregistration Form
Mail $4.00 (*$1.00 off the gate admission of $5.00*), along with this coupon — *Receive Tickets via Return Mail*

Name _____
Street _____
City/State/Zip _____
Telephone # _____

Make check payable to Golden Gate Shows
Mail to: P.O. Box 1208, Ross, CA 94957

LETTERS

More *dBase* Hints

I read with interest Bill Amatneek's article on *dBaseIII* and Mailmerge. I have been using *dBaseII* in a similar manner. It is possible to write the dBase|.dbf file to another|by following the command with 'DELIMITED.'

However, the resulting Mailmerge .df has so many delimiters that it is difficult to read. I therefore use the following program:

```
* MERGDAT2.PRG
  (VERSION 1.2, R. A.)
  Set-up: Auto wrap Is OFF
  (value = 0)
set talk off
set echo off
use b:mrg80:4.dbf
set alternate to b.cus80q4.dbm
[for correspondence to
  customers who brought cars
  in the 4th  quarter of 1980]
set alternate on
do while .not. eof
  ? record,trim(title),trim
  (firstname),trim(lastname),
  trim(sal),  trim(address),
  trim(city),state,statezip,year,
  trim(model),  trim(model2),
  delivery
    skip
enddo
```

The "record" is the *dBase* record number and also serves as the Mailmerge number. The .dbm file is read by Mailmerge. The autowrap does not have to be off, but it is easier to scan very long strings in *dBase* files on the monitor.

These files have been used in a follow-up mailing program for a Volkswagen salesman, who agreed to purchase the computer in exchange for the mailing service.

The original .dbf. file has been edited with quotation marks, only if appropriate to Mailmerge, not around every field which makes it very confusing (especially if you have to wear tri-focals). The resulting Mailmerge .df might end up looking something like this:

```
df record,title, firstname,
lastname,salutation,address1,
address2,year,model,
dellverydate,FILE1,FILE2
```

FILE1, etc. will pick up other (.fil,etc) files on the diskette which may be applicable to that customer or a promotional program such as the introduction of a new car model.

Because the letters (and envelopes, not labels) are so highly individualized, the mailing program has been very effective, both in returning the customer to the store and in obtaining referrals. The style in which the letters are written, of course, matters a lot.

I purchased this package two years ago: DEC Rainbow, 128K (minimum necessary at the time for *dBaseII*), *WordStar*, *MailMerge*, *Multiplan* and Oasis' *Word Plus*. I had no previous experience with personal computers but I bought the *dBaseII* and resolved to learn how to use it because I wanted a whole system that worked when I brought it home.

I am supported by a $30/month contract by Digital, the best value of which is their 800-hot-line that operates 7-days a week.

In the above apparently simple program I had originally put "set alternate on" up at the top with the other "switches" — it looked neater. The program ran but information was written to the new file on the screen but not on the disk.

I phoned Digital and their *dBase* group worked on it for an hour or so, then told me they would call me back. It was late on a Sunday afternoon. But they did call back with the answer, and the mailing went out that night.

I can understand why Digital has backed out of the personal computer business. It probably does not pay to support neophytes like me. The contract also covers the hardware but in almost 24 months of hard use nothing has ever broken down.

R. Aney
Los Angeles

Atari Users Get Serious

With the advent of the new Atari 520ST (512K, disk drive computer and color monitor for under $1000), it would be nice to be taken seriously.

Please include articles about the new Atari and Commodore. I just bought the Atari and it is dazzling — I feel like I bought a real winner.

If not articles, at least show some respect for the product I bought — it seems like Apple is so cavalier.

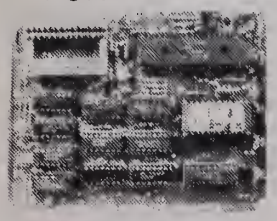
A Reader

Normally we don't print anonymous letters, but this seems to be a popular sentiment. See articles in this issue — Ed.

Letters are heartily encouraged. Please send them to Letters, MicroTimes, 5951 Canning St., Oakland, CA 94609. Please sign your real name and include the town where you live.

TEAC FD-55B DS/DD HALF HEIGHT FOR IBM PC $89.95

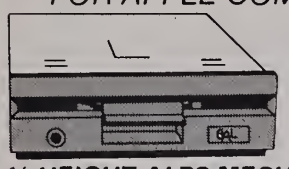
EPROM PROGRAMMER
FOR APPLE COMPUTERS



RP525
$79.95

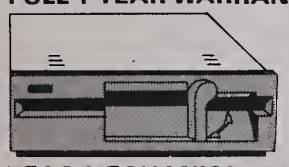
- DUPLICATE OR BURN ANY STANDARD 27xx SERIES EPROM
- EASY TO USE MENU-DRIVEN SOFTWARE INCLUDED
- MENU SELECTION FOR 2716, 2732, 2732A, 2764 & 27128
- HIGH SPEED WRITE ALGORITHM
- LED INDICATORS FOR ACTIVITY
- NO EXTERNAL POWER SUPPLY REQUIRED

DISK DRIVES
FOR APPLE COMPUTERS



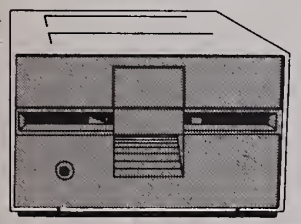
BAL-525
$119.95

- ½ HEIGHT-ALPS MECHANISM
- 100% APPLE COMPATIBLE
- FULL 1 YEAR WARRANTY



BAL-500
$139.95

- TEAC MECHANISM- DIRECT DRIVE
- 100% APPLE COMPATIBLE
- FULL 1 YEAR WARRANTY



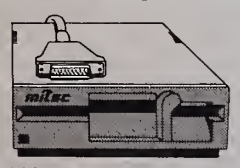
JDR
AP-135
$129.95

- FULL HT. SHUGART MECHANISM
- DIRECT REPLACEMENT FOR APPLE DISK II
- SIX MONTH WARRANTY

DISK DRIVE ACCESSORIES

DISK CONTROLLER CARD	$49.95
APPLE IIc ADAPTOR CABLE	$19.95

NEW FOR APPLE IIc



MITAC
AD-3C
$139.95

- 100% APPLE IIc COMPATIBLE, READY TO PLUG IN W/ SHIELDED CABLE & MOLDED 19 PIN CONNECTOR
- FAST, RELIABLE SLIMLINE DIRECT DRIVE
- SIX MONTH WARRANTY

MF-100
MULTIFUNCTION CARD
FOR IBM PC/XT

ALL THE FEATURES OF AST'S 6-PACK+ AT HALF THE PRICE!

- 0-384K RAM
- SERIAL PORT
- PARALLEL PORT
- GAME PORT
- SOFTWARE INCLUDED

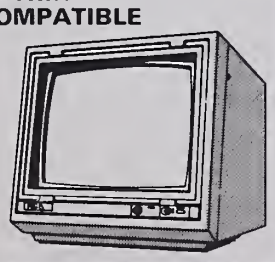
$129.95

ONE YEAR WARRANTY

TAXAN MODEL 415
RGB VISION III MONITOR
ORIGINALLY MADE FOR ACORN COMPUTER

- 18 Mhz BANDWIDTH
- 640 x 262 PIXEL RESOLUTION
- 16 COLORS WITH INTENSITY CONTROL
- 12 INCH BLACK MATRIX
- IBM AND LOTUS COMPATIBLE

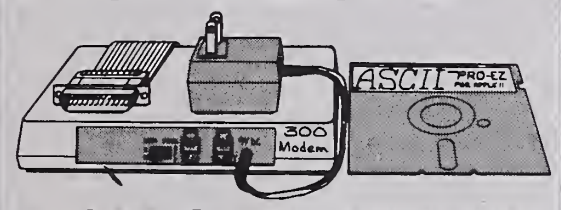
ONLY $299.95



RGB MONITOR CABLE FOR IBM	$15.95
COLOR DISPLAY ADAPTOR	$129.95

- SAME AS IBM COLOR CARD
- SUPPORTS COMPOSITE OR RGB MONITOR

MODEM
FOR APPLE OR IBM



INCLUDES ASCII PRO-EZ MENU DRIVEN SOFTWARE (AT LEAST A $100.00 VALUE IN ITSELF!)

- FCC APPROVED
- BELL SYSTEM 103 COMPATIBLE
- 300 BUAD
- AUTO-DIAL/AUTO-ANSWER
- DIRECT CONNECT
- INCLUDES AC ADAPTOR

ONLY $69.95

PLEASE SPECIFY APPLE OR IBM WHEN ORDERING

16K RAM CARD $39.95
FOR APPLE II+

- 2 YEAR WARRANTY
- EXPAND YOUR 48K APPLE TO 64K
- USE IN PLACE OF APPLE LANGUAGE CARD

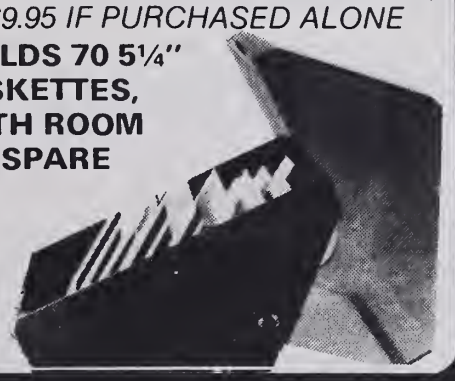
BARE PC CARD AND INSTRUCTIONS $9.95

DISKETTE FILE

$8.95 IF PURCHASED WITH 50 DISKETTES OR MORE

$9.95 IF PURCHASED ALONE

HOLDS 70 5¼" DISKETTES, WITH ROOM TO SPARE



NASHUA DISKETTES
5¼" BULK PACKAGED DS/DD WITH HUB RINGS

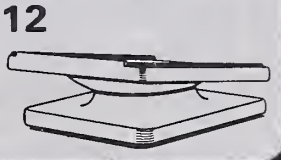
$.89ea.	$.95ea.	$.99ea.
QTY 250	QTY 100	QTY 50

VERBATIM DATALIFE DISKETTES

SS/DD	SOFT SECTOR	$29.95
SS/DD	10 SECTOR HARD	$29.95
DS/DD	SOFT SECTOR	$34.95

MONITOR STAND $14.95
MODEL DS-12

TILTS AND SWIVELS TO PROVIDE OPTIMUM VIEWING ANGLE, REDUCES OPERATOR FATIGUE



IBM COMPATIBLE POWER SUPPLIES

130 WATT
$99.95
XT COMPATIBLE

- +5V @ 15A, +12 @ 4.2A -5 @ .5A, -12 @ .5A
- UPGRADE YOUR PC, POWERS HARD DISK
- POWER CABLES FOR 4 FDDs
- ONE YEAR WARRANTY
- SWITCH ON SIDE (FITS IBM CASE)

100 WATT
$89.95

- SWITCH ON REAR
- FOR USE IN OTHER IBM TYPE MACHINES
- AVAILABLE IN 100W OR 130W VERSIONS
- 90 DAY WARRANTY

130 WATT MODEL **$99.95**

JDR Microdevices
1224 S. Bascom Avenue, San Jose, CA 95128
800-538-5000 • 800-662-6279 (CA) • (408) 995-5430
FAX (408) 275-8415 • Telex 171-110

RETAIL STORE - 1256 S. BASCOM AVENUE
HOURS: M-W-F, 9-5 TU-TH, 9-9 SAT, 10-3

PLEASE USE YOUR CUSTOMER NUMBER WHEN ORDERING

TERMS: Minimum order $10.00. For shipping and handling include $2.50 for UPS Ground and $3.50 for UPS Air. Orders over 1 lb. and foreign orders may require additional shipping charges - please contact our sales department for the amount. CA. residents must include 6% sales tax, Bay Area and LA residents include 6½%. All merchandise is warranted for 90 days unless otherwise stated. Prices are subject to change without notice. We are not responsible for typographical errors. We reserve the right to limit quantities and to substitute manufacturer. All merchandise subject to prior sale.

© Copyright 1985 JDR Microdevices

APPLE IS A TRADEMARK OF APPLE COMPUTER CO.

Designing Your Computer System

Most of us use only 20% of our mental capacity. Likewise, we quite often use a similar percentage of our computer power. The average consumer/businessman has a single purpose and buys the computer for that reason. The other capabilities are often ignored.

CAD systems on computers, for instance, monopolize the computer with no other purpose than to provide a CAD environment. Today the opportunity exists for a firm to use the same machine for CAD that it is using for Lotus. You may find the architect working on the CAD during the day and the bookkeeper using it during the night.

If it's chosen carefully, the first computer need not be *just* that. If it proves itself, it may be the first of many. If, on the other hand, it is misused, it could be the last for a long time.

However, there is good reason not to combine some tasks. If the secretary is always using the computer for word processing, the engineer will not find available time on the machine. The potential saving in secretarial time may not result in as large a productivity improvement overall as having the engineer constantly online.

Today's time managers must prioritize what projects become computerized and who gets a personal workstation. These choices are very difficult to justify until after the fact. Sometimes the combining of tasks seems as though it would help in the justification of a system. However, one must keep in mind that if it's chosen carefully, the first computer need not be *just* that. If it proves itself, it may be the first of many. If, on the other hand, it is misused, it could be the last for a long time.

The human mind functions fine on 20% usage. I have often heard people say that Albert Einstein used more than the normal 20%. What if he didn't? What if he was just very creative? Maybe he was able to focus and unfocus his mind when required; focus on the solution to a complex logical mathematical solution to an abstract problem. He may also have possessed the ability to look at the problems with a childlike open mind in a very unfocused manner. His greatest breakthroughs were made in his early years, as are those of most outstanding mathematicians. In later years he became unable to unfocus; he could no longer close out all the other functions of his mind, a common problem as most of us grow older.

When focused, he used his mind to capacity in one area, unburdened by other distractions, as a computer might be used as a CAD system alone, not attempting to do spreadsheets or word processing.

As the line between minis and micros blurs even more, the capacity for multiple functions will increase. There are so many microcomputers out there now that the quality of the software products is surpassing the software available for the larger machines.

Most of us perform multiple functions with our home computers. Letters are written using a word processor and calculations on the purchase of our new house are made with a spreadsheet. Games are also played using the same machine. What prevents this sharing of a resource from happening on many commercial systems? When one of the users monopolizes it so much that the others cannot use it, or when it is not available at convenient times for the users, contention is generated. This will cause the other users to avoid the use of the machine because it is not available when they need it, or because it will be taken from them when it is needed the most.

Another part of the problem that we users face is expecting too much out of each system. Word processor users who until recently used a typewriter will complain that the processor does not have a function that they think they critically need. The answer to this problem quite often is to learn to live within the limits of the program that you purchased. After all, the simplest of word processors is a great improvement over the typewriter. If you have become proficient with your system and can see an increase in productivity that could justify the cost of a new program, then buy it.

When assets are shared, or when the same asset is used for multiple purposes, then that asset may develop contention problems.

My grand conclusion is that using a computer as the mind is used is not bad, but design your system so that you will not be trying to do too much with the same machine. If your machine is used sporadically, then let it have many uses. If it is heavily used, allow it to have few uses and users.

AST And Apple

AST, which manufactures add-on boards for IBM computers, is currently in the process of forming a relationship with Apple. AST has long been a maker of boards for IBM; in fact, 10 weeks after the first IBM-PC hit the streets, the first AST board was ready. Companies like AST have made MS-DOS the industry standard. Unfortunately for IBM, Big Blue is having some trouble controlling the standard. Thanks to Compaq and other "compatible" manufacturers, the issue of compatibility revolves not around IBM but the standard which IBM created.

Steve Jobs may not have wanted this to happen to Apple Computer, but with his departure Apple appears to be ready to open Pandora's box and allow add-ons. AST has been negotiating with Apple and appears to have developed a relationship.

During this period of stagnation in the industry, AST has continued to show phenomenal growth. Its product line is one reason. Management is another. AST has signed contracts with Borland, developed products for IBM, and is on the springboard of developing for Apple. AST is now modernizing its production line for high productivity.

An Apple For The Student?

The Apple II line is still a good buy. It's hard to believe, but like the DC-3 which has been flying for 50 years now, the Apple II is a durable classic. A lot of computers and computer companies have come and gone while the Big Apple II has continued to hold its own.

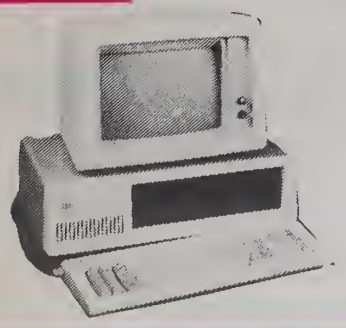
In every category, the Apple II has kept up. It has memory expansion. New software is being released for it daily. Probably the largest cross section of software products exist for it. For hardware, it is the most expandable of all computers available today. The Apple can be configured to almost any need in the home or small business. It is also perfect for the student, and plays as many games as any other computer on the market.

It is certainly not the computer I would recommend for everyone, but credit must be given where due to a computer that has become a tradition.

Ashton-Tate To Acquire *Multimate*

Ashton-Tate is purchasing *Multimate* in order to gain a strong position in the word processor market. *Multimate*'s new LAN version should be out within the next month. □

SUMMER SAVER SPECIALS



IBM YTEM $AVER
PC w/256K 2 ½ Ht DRS DISPLAY & CARD

ONLY **$1949**

COMPUTER$

IBM XT 256K	Low
IBM AT 20MG	$ave
AT&T 6300	Call
Compaq (All models in stock)	Call
Sanyo MBC 885 (100% IBM Compatible)	**Call**

MONITOR$

IBM Color	575
Princeton HX-12/MAX-12	470/185
Sony KV-1311 . (Built-in IBM interface)	$ave
Amdek 310A	164
Quimax Amber	177
Polo Color RGB (IBM)	330
NEC JB1280/1285 (IBM)	150
Many Many Others	Call

RGB Cards 16 Color for your IBM Compatibles or Apples to all SONY. Monitors, Projection T.V.s . . . . . .Call

MULTIFUNCTION, COLOR, MONOBOARD$

AST 6 Pack w/64K	$ave
Quadram Quadboard	239
Techmar Captain w/64K	199
Hercules Color/Mono	159/313
Everex Graphics Edge	Unbelievable

$OFTWARE

Lotus 1-2-3	309
Symphony	409
Wordstar 2000/2000 +	279/379
Wordstar Pro	259
dBase II/III	279/389
Multi-Mate	279
Display Write	$ave
Word Perfect	$ave
Volkswriter Deluxe	185
Harvard Project	239
Framework	$ave

MODEM$

Hayes 300	205
Hayes 1200B	375
1200B No Software	330
Hayes 1200	$ave

DRIVE$/HARD DISK$

IBM Drive	155
Teac ½ Hts	99
Mitsubishi ½ Hts	109
10 MG, 20 MG	$
By Tandon, Microscience	A
Nippon	V
w/Western Digital & DTC Controller	E

Printers at Hi-Speed

EPSON LX-80, FX-80 +, FX-100 +, LQ-1500

NEC Spinwriters, Elf 360

TOSHIBA P1340, P351

OKIDATA 182P, 192P, 193P

JUKI 2200, 6300, 6100

Tokyo Electronics

We are the Original Independents • 25 Years Serving the Bay Area

Japan Center, S.F.
1737 Post
(415) 567-1213

Downtown, S.F.
650 Mission
(415) 777-1400

San Jose
3143 Stevens Creek
(408) 248-6611

These are Cash-N-Carry Prices

***Megaworks* may be the most useful add-on you can buy for *Appleworks*.**

UTILITIES

Megaworks

Published by: *Megahaus*
For: *Apple IIe/c*
Suggested retail: *$125.00*
Reviewed by: *John D. Gresham*

When *Appleworks* appeared last year, it quickly became apparent that it was one of those "special" software products that periodically appear in our industry. Not only is it a bestseller, its sales actually drive the sales of other products like computers and add-ons. *Visicalc* did it for the Apple II+ and *Lotus 1-2-3* did it for the IBM PC/XT. Now *Appleworks* is doing it for the Apple IIe/c family of computers. How well, you might ask. Well, it just recently knocked *Lotus 1-2-3* off the top of the software bestseller lists.

Yet, good as *Appleworks* is, it is a package with a number of holes. No graphics, mail merge, or spell checking, none of a number of other highly useful utilities, are included with the basic *Appleworks* package. This has resulted in a number of software packages designed to dovetail with the basic *Appleworks* package. The most successful of these has been *Megaworks* from Megahaus. The reason for this is simple. In one reasonably priced ($125.00) package, Megahaus has managed to include both mail merge and spell checking utilities that do more than just work with *Appleworks*. They in fact become part of your *Appleworks* operating system. All of the keystroke commands, file structures, and system cues from *Appleworks* are used in *Megaworks*, so the process of learning and using it is extremely easy.

The mail merge function of *Megaworks* is quite simple to use. All that is involved is the creation of a mail list and a form letter master. The form letter master has insert points designated for the mail list information, and the data flow from the data base across the *Appleworks* clipboard for merging and printing of the form letter(s). The spelling checker is even simpler, with the utility having a 50,000-word capacity dictionary that automatically checks a document, and then keys the user to the words that require attention. If the checker runs into a new word that doesn't currently reside in the 40,000-word basic dictionary, the word can be added with a single keystroke to the 10,000-word supplemental dictionary. While this spell checker does not prompt the user with possible correct spellings of words, it does minimize the workload by only displaying a word within a document to be corrected once.

All-in-all, *Megaworks* is probably the most useful add-on that you can currently purchase for *Appleworks*. Reasonably priced, well packaged, and easily learned, it's the perfect companion software. And with other new *Appleworks*-related products coming out soon from Megahaus (*Reportworks* is due around Labor Day), *Megaworks* should form the basis for an entire series of *Appleworks*-based utilities software. I highly recommend it.

TELECOMMUNICATIONS

SAM: The Smart Answering Machine

Manufactured by: *Dialectron, Inc.*
For: *IBM PC, 192k or more*
Suggested retail: *$295.00*
Reviewed by: *Warren Sirota*

"Hello. You have reached Brian's answering machine. Please wait for the beep and leave a message. Then my machine will call back your machine, and the two machines can get together for lunch sometime." So goes the message on my friend Brian's phone line, and it used to seem merely whimsical. That is, until I met SAM.

SAM is the Smart Answering Machine from Dialectron, Inc. It consists of a board that plugs into your PC or compatible and connects to your phone line, and software that runs the board. In its simplest usage, SAM is a disk-based answering machine, allowing callers to leave digitized messages on your computer which you can then listen to in any order, saving some for later re-listening and discarding others. The maximum length of each message depends upon the memory in your machine, starting at about 90 seconds for a 256K computer.

SAM is much more than an answering machine, however. Probably its most useful feature is the ability to leave personalized messages for (theoretically) up to 999 callers. If you were a consultant or salesperson who spent a lot of time out of the office, it could be very handy to have a couple of personalized messages on the machine telling your spouse and business partners where to reach you. The public at large would only hear your generalized greeting message, but people who you've given access codes can press the "*" key on a touch-tone phone, followed by their access code, and receive a message recorded just for them.

Another feature of SAM is its distribution list. If you have information which you needed distributed to a number of people, then you can use SAM to call the entire list, deliver a message, take a response, and retry any calls which didn't get through, all while you're out on the putting green enjoying the sun. One SAM user that I spoke to uses this feature to arrange meetings, where a number of phone calls are involved.

Complex interactions with people who answer the phone can be programmed. SAM can call up individuals, ask them to press a number if they would like information about a particular product, and then play various messages depending upon which number they pressed. A report would be issued indicating which choices were made for each phone number.

SAM performs most of its functions reliably and easily, although it is dependent upon the exact timing of the IBM PC and so will only run on certain compatibles (the developer says that versions for other MS-DOS machines will be released in the near future). Installation is easy, and the menu-structure of the program is clear. Programming a complex interaction which allows the listener to make a lot of choices is not explained well in the manual, but it isn't too hard to do.

In addition, SAM is completely programmable from a remote location. When you dial in the special operator's access code, a voice prompts you for the mysterious "Function?" and "Command?" You have to learn the meaning of a few mnemonic function codes to use this, but you can, for example, call up and change the personalized message

TELECOMMUNICATIONS

that you had left for your spouse when you discover that you won't be home for dinner, after all.

I have some reservations about SAM. Firstly, be advised that a typical digitized voice message uses from 30K–150K of disk storage. This means that a hard disk system with lots of free space is necessary if you expect to get more than 10 or so calls before deleting any. Also, the SAM software is a foreground task, so you cannot use your computer while SAM is running. For someone like me, who needs to screen calls while working on the computer, this means that I'd better not throw away my PhoneMate.

SAM might be an appropriate product for a firm that was involved in telemarketing, or for a professional who is out of the office a lot. It has advantages over an answering service, in that individuals can leave a complex message and confidentiality can be maintained. An individual considering such an application should also be aware, however, that there are companies which rent "voice mailboxes" which duplicate many of SAM's functions, and which connect to a national network and allow people from throughout the country to call you at low toll rates.

And then there's that nasty recurrent dream, in which SAM calls Brian's answering machine, and the two of them beep at each other in touch-tone ecstasy as they make a luncheon appointment.

UTILITIES

Fast Load

Published by: *EPYX, Inc.*
Suggested retail: *$29 – $39, depending on dealer*
Reviewed by: *Ed Shurtleff*

Let's face it. The 1541 disk drive isn't exactly the fastest thing in the world for running your C-64. I've got some programs that suggest going out for a smoke or a nice cuppa coffee, just to make you feel better while heavy files are being loaded. And some games seem to take forever to start, or to get to a new screen right in the middle of the exciting part. Something had to be done to break the bottleneck.

The inexpensive choice seemed to be a software routine, while the expensive one was, and is, dual drives through the parallel port. I tried a couple of software programs without much luck. Load time of the "fast" software plus the desired program itself doesn't really save enough to make this approach effective. Combining with a LOAD and RUN boot routine for a long program does help some, if you know how to do this and your commercial software will allow it. I don't think the dual drive approach is cost-effective for business applications that don't involve a lot of data transfer. Also, many heavily protected games won't work on anything else but the old 1541.

The people at EPYX sensed the same need and came up with a solution to help the user and, not so incidentally, help them sell their game software. *Fast Load* is a cartridge that plugs into the cartridge slot of the C-64 and allows you to load, save and copy disk files three to five times faster than normal. Games don't have boring lags and *The Consultant* database has now become a positive joy to use. It doesn't require any hardware or wiring modifications — you can unplug it if you want to, or use its internal DISABLE feature without unplugging. You will probably have to unplug only to run some special purpose utilities such as "disk-doctors" or copy programs that talk directly to the drive controller, but this is to be expected. *Fast Load* costs about the same as a software game, and seems to be a well-accepted solution. EPYX has sold over 200,000 copies to date, and they plan to build it into all their new Commodore software — like the new *Summer Games*.

I bought mine for the fast loading capability only. I was pleasantly surprised to find a complete DOS wedge, plus a disk utility, plus a file utility, PLUS a machine language monitor all in the package! All of these work well. You can copy individual files, just the contents of the RAM, or copy the entire disk with a lot of options. You can edit a disk, or you can "lock" a file to prevent its deletion and unlock it later if desired.

The only problem I noted was that saves of sequential files wouldn't happen. Other kinds of files saved OK, and no other operations seemed to be affected. I called the customer service people at EPYX, who informed me that I had a very early version of the cartridge and gave me three fixes for the problem. I pass these on, just in case you have one of the early versions. New cartridges don't have the problem.

First, if you've got a Commodore or Commodore-emulating printer daisy-chained through your

MORE BYTES. LESS BITE.

512K for your Macintosh only $495

Introducing SuperMac's 512™, the Macintosh memory expansion kit that your local computer dealer can install in minutes. That's because the 512 is a genuine Apple board, fully upgraded with only the best quality components. So it's no surprise that it works exactly like Apple's upgrade.

There's more. The 512 is the only expansion kit, including Apple's, to come with a Full Lifetime Warrantee. If a memory chip ever fails, we'll replace it absolutely free. Forever.

Best of all, the 512 costs hundreds less than Apple's upgrade. So if you're looking for a Fat Mac at a thin price, call us for the name of the SuperMac dealer nearest you **(415)964-8884.**

SUPERMAC TECHNOLOGY

1901 Old Middlefield Way, Mountain View, CA 94040, (415) 964-8884

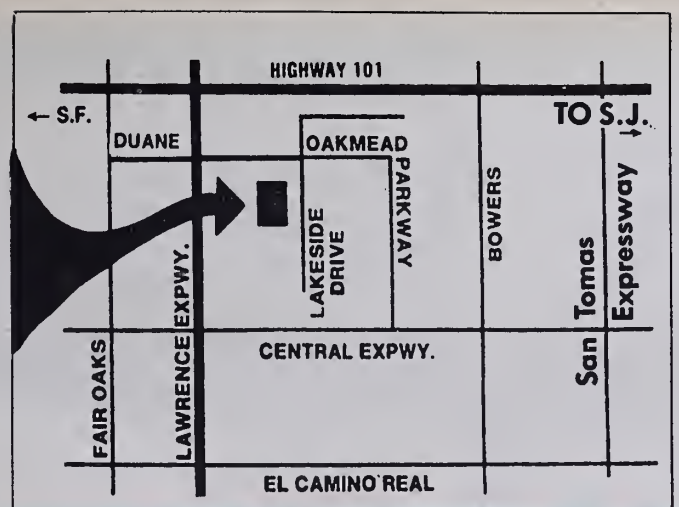
Shown above are the display areas where you get hands on experience with the newest computers and software. The **Fry's Service Center** (right) is ready to serve all of your upgrading, modifying, and repair needs.

HOME OF FAST, CONVENIENT, COURTEOUS SERVICE

fry's ELECTRONICS

541 LAKESIDE DRIVE
SUNNYVALE

PHONE:
408/733-1770



PRICES GOOD THRU SEPT 7

HOURS:
Mon.— Fri.
8 am-8 pm,
Sat. 9-6,
Sun. 10-6

VISA,
MASTERCARD
WELCOME
WITH A 2%
SURCHARGE
LIMIT RIGHTS
RESERVED

"The Choice Of A New Generation Of Electronic Shoppers"

IBM PC
COLOR SYSTEM
$1995
256K RAM
2½ Ht. Floppy Disk Drive
Color Graphics/-Printer Card
AMDEK Color 500 monitor

IBM PC XT
BUSINESS SPECIAL
$2695
640K RAM
10 MB Hard Disk
360K Floppy
Monochrome monitor
Hi-Res Mono Graphic Printer Card

IBM ENHANCED AT
512K RAM
1.2 MB Floppy
20 MB Rodime Hard Disk
Hi-Res Mono Graphics/ Printer Card
Hi-Res Mono Monitor
$4495

COMPAQ DESK PRO 286
$3995
1 MB RAM
1.2 MB FLOPPY DISK DRIVE
MONITOR CONTROLLER
SERIAL/PARALLEL PORTS
MONOCHROME MONITOR

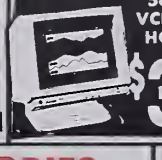
COMPAQ PORTABLE
$1995
256K RAM
2 Floppies

IBM PC MONO SYSTEM
256K RAM
2 ½Ht 360K Floppies
Hi-Res Mono Graphics Monitor
$1818

FREE FLIP 'n FILE 15

3M DISKETTES
5¼" BOX OF 10
$18.88
Authorized Distributor Information Processing Products
3M

AMDEK COLOR 500 MONITOR
560X200
VCR/AUDIO HOOK UP
$318



TECMAR MAC DRIVE
10 HB Hard Disk for MacIntosh
$1395

IBM SOFTWARE

LOTUS 123	$288
TURBO PASCAL	$54.95
TURBO TOOLBOX	$39.95
TURBO TUTOR	$27.95
SIDEKICK	$34.95/$54.95
PFS: WRITE	$89.95
PFS: FILE	$89.95
PFS: REPORT	$79.95
GATO	$34.95
ZORK I	$29.99
WORDSTAR 2000 PLUS	$325
COPY II PC	$24.99
GEM DRAW	$119.95
PRINTMASTER	$49.95
DBASE III	$399

APPLE SOFTWARE

GATO	$34.95
APPLEWORKS	$179
FLIGHT SIMULATOR II	$34.95
PRINTSHOP	$36.95
PRINTSHOP GRAPHICS	$19.95
MACVISION	$319
NEWSROOM	$34.95
MS WORD (MAC)	$148
MS CHART (MAC)	$129
MS FILE (MAC)	$179
LODE RUNNER	$29.95
AIRBORNE (MAC)	$29.95
DOLLARS AND SENSE	$75.95
PFS: BEST SELLERS	$199
PFS: WRITE	$89.95
COPY II PLUS	$24.99 each
COPY II MAC	$24.99 each
TYPING TUTOR III	$39.95

PERIPHERALS

AMDEK 310A	$159
AMDEK COLOR 710	$449
AMDEK COLOR 600	$449
QUIMAX 14" MONO	$169
QUIMAX 14" COLOR	$469
OKIDATA 192	$399
OKIDATA 193	$569
OKIDATA OKIMATE 20	$229
EPSON FX-80+	$389
EPSON LX-80	$269
EPSON LQ-1500	$999
EPSON JX-80 COLOR	$499
EPSON FX-185	$569

ACCESSORIES

MAXELL DS/DD 5¼" DISKETTES	$21.95
3M HI DENSITY DISKETTES	$49.95
3M 3½" DISKETTES	$29.95
MAXELL 3½" DISKETTES	$29.95
IBM PC PRINTER CABLE	$12.95
POWER GUARD SURGE SUPPRESSOR	$29.95
CA POWERLINE 6	$59.95
U.S. POSTAL APPROVED DISKETTE MAILER	$2.95
PRINTER CABLE	$12.95
PRINTER PAPER CLEAN PERF. 2500 SHEETS	$19.95
PRINTER PAPER GREEN BAR 14⅞ x 11	$34.95

HARDWARE

MICROSOFT MOUSE	$149
PC MOUSE	$149
PC MOUSE W/PAINT BRUSH	$149
AST SIXPAK PLUS 64K	$249
AST ADVANTAGE 128K	$449
TECMAR CAPTAIN	$169
TECMAR MAESTRO	$359
HAYES 1200B	$389
EVEREX THE EDGE	$329
HERCULES COLOR CARD	$168
HERCULES GRAPHICS	$319
QIC60H TAPE BACKUP	$1595
MACH III JOYSTICK PC	$39.95

SCORCHING MEMORY PRICES AT FRY'S

256K RAM
150 NS
$2.88

64K RAM
150 NS
66¢ EA.

128K RAM
Give your IBM AT the Memory it deserves
$4.99
150 NS

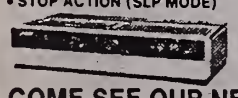
80287
MATH COPROCESSOR FOR IBM AT
$188

8087-2
8 MHZ Math Coprocessor for IBM PC
$99.95

FRY'S VCR-VIDEO BLOWOUT

NEW '86 MODEL

RCA VHS VCR
- EXPRESS RECORDING (XPR)
- ELECTRONIC TUNER — 80 POSITIONS
- HIGH SPEED SEARCH (SLP MODE)
- STOP ACTION (SLP MODE)
- DIGITAL CLOCK/TAPE COUNTER/CHANNEL DISPLAY



$288
MODEL VLT 250

COME SEE OUR NEW 1986 LINE OF RCA VCR'S

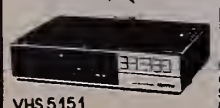
JVC 4 HEAD VCR
Special Effects
Wireless Remote
Front Load
$388

VHS & BETA TAPE DUSTCOVERS
99¢ each

ALLSOP 3
VHS OR BETA HEAD CLEANER
$11.95

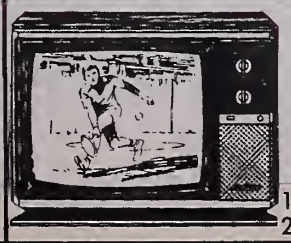
NEW '86 MODEL

QUASAR VCR
FRONT LOAD
WIRED REMOTE
$288



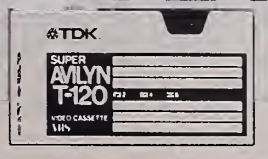
VHS 5151

14-day/2-event Programmable Clock Timer, Pause, Slow Motion, Search, 8 hrs. of recording.



Quasar 19" COLOR TV
$229
1 Year Parts And Labor Warranty
2 Year Picture Tube Warranty

TDK
TDK T-120
VHS VIDEO TAPE
$4.77



DYNA PC/XT
The Very Best One Of The IBM PC/XT Compatible Computers

- It runs Lotus 1-2-3-, Flight Simulator, dBase III Symphony, Framework, Auto Cad, C Compiler (All) etc.
- It works on PC-DOS, CPM/86, MS DOS
- Don't hesitate to bring software and hardware to do bench test!

- **$625** For DYNA PC 64K BASIC UNIT (it includes mother board case keyboard/130w power supply)
- **$975** For DYNA PC 256K/ 2½ Ht. DR.
- **$1550** for DYNA XT 256K/ 2½ Ht. DR./10 MB Hard Dr.

IBM AT OVERSTOCK SALE

(Limited to stock only, no profit, sold at cost, it won't last long.)

- IBM 80286 CPU board w/512K.IBM 1.2 MB Floppy disks
- 20 MB CMI disk (fast access) .IBM serial/parallel card
- IBM Floppy disk/hard disk controller
- Quimax 14" TTL monitor
- USA made monochrome/ graphic/ printer card

$4495

FLOPPY DISKS AND ACCESSORIES

- Shugart SA455 DS/DD 360K ½ Ht . .$99
- Teac FD 53B DS/DD 360K ½ Ht. . . .$95
- Key Tronic 5151 Compatible Keyboard $130
- Quimax 14" TTL Amber (Green) Monitor $165
- Polo RGB Color monitor (640x200) .$365

UPGRADE KIT FOR PC TO XT

- DYNA XT 130w power supply $130
- DTC hard disk controller w/ cable . .$185
- TEAC 10MB / DTC controller . . . . .CALL
- Micro Science 10MB & 20 MB / DTC controller . . . . . .CALL
- 10MB tape back-up drive with cable, 2 tapes & hardware $595

CLEARANCE SALE

Shugart 10MB ½Ht/ DTC controller . .$425
Shugart 8MB Full Ht/ DTC controller .$325

DYNA SYSTEMS
1500 WYATT DR. ST. 8
SANTA CLARA CA
(located at Montague & Mission College Blvd.)

Tel. (408) 748-8501

SILICON VALLEY'S SUNDAY, AUG. 25

★ HAPPY HACKER ★
COMPUTER SWAP

770 TRIMBLE ROAD
★ Nepredak Hall ★

EASY to REACH: From 101: At Santa Clara take TRIMBLE ROAD East.
From 17: Take MONTAGUE EXPRESSWAY West.

9:30 am to 4:00 pm. ADMISSION $3:00 - Under 14 FREE!
Information: Phone (408) 372-2281

disk drive, leave it turned off except when you are ready to print. This isn't such a bad idea for non-*Fast Load* operations either. It saves power, wear and tear on the printer, helps paper alignment, etc. In the majority of cases, this is all that's needed to make an old *Fast Load* cartridge work properly.

Second, if the first fix doesn't work for you, reset your disk drive before SAVEing by turning it off, then back on. This will clear DOS memory and allow the save.

Third, if both fixes don't work, return the package to the store where you bought it, or direct to EPYX for replacement with the latest version (which doesn't have any glitches at all that I can find).

Updated Versions Of CP/M-80 For The Epson QX-10

Published by: *Digital Research Inc.*
Suggested retail: *under $25.00*
Reviewed by: *John McMullin*

Like a vintage wine, the venerable CP/M-80 operating system seems to improve with age. Most Epson QX-10 owners received the CP/M-80 Version 2.0 with their computer. This version was used to run the Microsoft MBASIC as well as the Peachtree software that was sold "bundled" with the QX-10. It would also run hundreds of other CP/M resident commands plus a few utilities including the very handy PIP transient command for copying files. Also on the version 2.0 disk we had a combination control utility program called CP+. The CP+ program was a bit redundant to CP/M, but some users preferred it for file management and printer control. All in all the 2.0 version was a mature operating system, reasonably free of bugs, that did its job well.

It all got better in February 1984 when Epson released an improved 2.2B version especially tailored to the QX-10. Gone was the redundant, menu driven CP+, and in its place were some new resident commands and utilities that were easier and faster to use. Even the popular PIP program was supplemented, but not replaced by, a more powerful utility called INDEXER. INDEXER provides rapid copying of files or groups of files and several other file management chores. I routinely put INDEXER on all of my data disks. Another new utility is SUBMIT, which will perform a series of preprogrammed chores including copying groups of files. A third important addition is a SETUP program somewhat more extensive than we have had before.

Perhaps the most impressive addition is the RAM disk facility. CP/M has always been restricted to the use of only 64K of RAM, letting the balance of the QX-10's 256K go to waste. Now, with the new versions, we can put most of that extra RAM to good use. With the RAM disk facility activated via the SETUP menu, your QX-10 thinks it has three disk drives: A, B, and M. Disk M, the RAM disk, holds only 112K, and it loses that if the power goes off or if you punch RESET. However, the RAM disk is the fastest disk in town if you want to run a program that needs frequent access to the disk for data or instructions. To use the RAM disk just put your program disk in the B drive, PIP or INDEXER your files or program to the M disk, and see how fast it runs! You can have the program output sent to the B disk for safety. Remember the RAM disk is not a

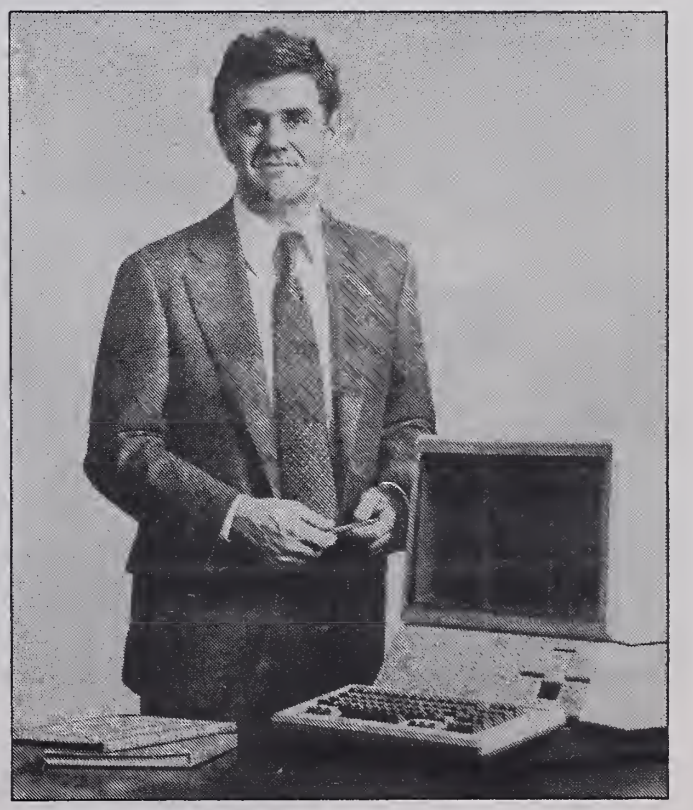
Finally.

An objective, professional source of advice on business computing.

Purchasing a computer system will be the most important business decision you will make this year. The consequences of that decision are too great to go it alone. You need help. We can help you make these critical decisions.

Our business is to know how to use computers in small businesses. We will perform a comprehensive evaluation of your business computing needs along with recommendations of specific products that will best serve your business needs.

Engelhart Associates is the independent, professional source of information for Bay Area businessmen who need advice regarding the purchase of a business computer system. An objective advisor, not a self interested salesman. We are not a "computer store." We have no inventory of hardware and software that we need to sell.



Make sure that your computer decision is informed by objective, professional advice. Call L.K. Engelhart Associates.

The right prescription for business computing.

L.K. Engelhart Associates
362 Arguello Boulevard
San Francisco, CA 94118
(415) 668-0764

WHY Pay More?...

Computer Sales At Its BEST...

Save 15% - 50%

"BEST SELLERS"

COMPUTER SYSTEMS

CALL FOR OTHER CONFIGURATIONS NOT SHOWN

IBM PC SPECIAL

$1999

256 Kb, 2 disk drives monochrome board/par. port, PGS/MAX-12(E) monitor

	RETAIL	SALE
IBM PC 256K w/Keyboard, Two DSDD 360K Drives, Hercules Color Graphic Card, Printer Adapter and Polo Hi-Res 12" RGB Color Monitor	3789	2289
IBM PC 640K with AST SixPack-Plus, keyboard, Two DSDD 360K Drives, Hercules Graphic Card, Two Printer Adapters, Serial Adapter, Clock/Calendar and Princeton MAX-12 Amber Monitor	3895	2549
IBM XT with 256K Memory, One 360K Floppy Drive, 10 MB Hard disk, Monochrome/Printer Adapter and HI-RES Monochrome Princeton Monitor Model MAX 12E	4920	2845
IBM PORTABLE (2 Dr.)	2895	2049
IBM AT (Basic)	3995	3295
IBM AT (Enhanced)	5795	4295
COMPAQ Portable (2 Dr.)	2699	2049
CALL FOR OTHER COMPAQ MODELS		
CORONA PPC-400 "New"	1495	1245
CORONA PPC-400 "New"	1695	1485

IBM PC JR

QUAD 128K RAM BOARD	295	199
QUADRAM Expansion Chassis	695	545
TECMAR PCjr CAPTAIN 128K	395	309

MONITORS

AMDEK 301A	230	159
IBM MONOCHROME	275	245
AMDEK Color 600 RGB	599	430
AMDEK Color 700 RGB	799	575
PRINCETON HX-12	695	459
PRINCETON MAX-12(E)	275	179
POLO RGB Color Monitor	599	379
TAXAN HI RES 122 (IBM)	230	159
TAXAN 420 COLOR	699	419

CALL FOR OTHER MONITORS NOT SHOWN

HARD DISK & TAPE BACKUP

FOR IBM PC/XT & COMPATIBLES (With Controller)

	RETAIL	SALE
BERNOULLI BOX (20Mb)	3695	2495
CMI 10Mb (External)	1395	895
MICROSCIENCE 10Mb (Int.)	1195	625
MICROSCIENCE 20Mb (Int.)	1595	895
RODIME 10Mb (Internal)	1195	795
RODIME 20Mb (External)	1695	1195
RODIME 33Mb (Full Ht)	2990	1475
Seagate 10Mb (Internal)	1195	640
Seagate 20Mb (Internal)	1595	995

PRICES MAY HAVE JUST DROPPED
CALL FOR CURRENT QUOTE

SIGMA Designs 20/45MB Hard Disk with Tape Back-up (External)	2995	2295
TALLGRASS TG 5025	3660	2895
TULIN 20Mb (Internal)	1595	995
TULIN 35Mb ½ Height	2990	1475
TULIN 40Mb (Internal)	1995	1295
EVEREX 45Mb Tape Back-up	1295	895
FOR IBM AT & COMPATIBLES		
RODIME AT-20Mb (Internal)	1595	995
RODIME AT-32Mb (Internal)	2595	1270
CMI AT-32Mb	2595	1375

MODEMS

CALL FOR OTHER MODEMS NOT SHOWN

VENTEL PC HALF CARD	549	439
VENTEL 1200 PLUS	499	399
HAYES SMARTMODEM 1200	599	409
HAYES SMARTMODEM 1200B	549	359
PROMODEM 1200	495	369
PROMODEM MAC PAC	599	399
PRDMODEM APPLE IIc'	549	369
MICROSTUF CROSSTALK XVI(SFT)	195	109

TERMINALS

WYSE WY-50	695	499
TELEVIDEO 914	695	595

SOFTWARE

WE CARRY SOFTWARE FOR MOST MIRO COMPUTERS ON THE MARKET. CALL US.

ASHTON TATE dBASE III	695	389
LOTUS 1-2-3	495	309
LOTUS/SYMPHONY	695	449
FRAMEWORK	695	359
MULTIMATE	495	279
BORLAND INTERNATIONAL SOFTWARE	CALL	
MICROPRD NEW WORDSTAR 2000	495	275
WORDSTAR 2000 PLUS	695	315

PRINTERS

CALL FOR OTHER PRINTERS NOT SHOWN

	RETAIL	SALE
BROTHER HR-35 (36 cps)	1245	779
DYNAX DX 15 XL (18 cps)	595	399
DAISY WRITER 2000	1495	949
DIABLO 630 SERIAL (SPECIAL)	2340	1149
DIABLO D-25	750	625
EPSON FX-85 PLUS (160/32 cps)	499	379
EPSON FX-185 PLUS (160/32 cps)	699	529
EPSON LO 1500 (220 cps)	1295	939
EPSON 7 Colors JX-80	699	529
IBM Quietwriter (40 cps)	1395	1249
JUKI Model 6100	599	399
JUKI Model 6300	995	699
LASER Printer Canon LBP-8A1	3695	2949
NEC P2 Series	799	565
NEC P3 Series	1150	799
NEC Model 3550/IBM **SPECIAL**	1495	1095
OKIDATA 192P	599	375
OKIDATA 193P	799	489
TEXAS INSTRUMENT 865-T	1295	1049
TOSHIBA Model 1340	795	579
TOSHIBA Model 351 "NEW"	1995	1195
SWINTEC Typewrtr/Printer 1145CMP	599	499
SWINTEC 8014 (GSA approved)	799	699

FLOPPY DISK DRIVES

TEAC ½ Height 360Kb	399	109
TEAC AT COMPATIBLE 360Kb	425	169
TOSHIBA ½ Height 360Kb	399	109

MULTIFUNCTION BOARDS

AST SixPackPlus w/64K/SideKick	395	259
AST SixPackPlus w/384K/SideKick	595	339
AST ADVANTAGE! with 128K	595	479
DIGIGRAPHIC 256K	429	199
DIGIGRAPHIC 384K	495	249
HERCULES GRAPHICS CARD	499	309
HERCULES COLOR CARD	245	159
Genoa Spectrum	459	329
QUADBOARD II 64 SPC	395	269
PARADISE MODULAR GRAPHICS	395	274
TECMAR CAPTAIN 64K	395	225
TECMAR GRAPHICS MASTER	695	459

ACCESSORIES

64K RAM	64	20
256K RAM Set of 9	195	144
MICROPROCESSOR 8087-2	299	149
XT 130W Power Supply	199	139
MASTER PIECE Power Center	149	119
PTI Datashield B/U Power 200 Watts	359	305
Power Surge Protectors	90/60	75/49

WE INSTALL SYSTEMS AND PROVIDE TRAINING. CALL FOR DETAILS

NOVELL "**LOCAL AREA NETWORK**" HARDWARE/SOFTWARE AVAILABLE
WE CAN PURCHASE FOR YOU AT DISCOUNT PRICES
ANY MICRO PRODUCT YOU NEED FROM OUR DISTRIBUTORS.

MasterCard VISA

NOW IN OUR 4TH YEAR OF BUSINESS

OUR POLICY • We accept VISA, Mastercard, Money Orders, Certified & Cashiers Checks, Personal Checks, Wired Funds • We do not charge your card until we ship • **OUR PRICES REFLECT CASH DISCOUNT. SHIPPING (UPS):** Call for shipping charges. Blue label and Next Day Air available

Call Between 9:00 a.m. and 5:00 p.m., Monday thru Friday

MICRO WORLD PC

415-945-0937

631 Tarrytown Court, Walnut Creek, CA 94598
TELEX 559268 Answerback MICROWORLD
EASYLINK MBX 62786537

Member: Chamber of Commerce: Listed Dun & Bradstreet

9/85

IBM COMPAQ CDC CONTROL DATA HERCULES RODIME EPSON OKIDATA Qume TECMAR NEC MICROSOFT AMDEK Tandon i·MEGA QUADRAM TAXAN WYSE CORVUS PRINCETON AST Apple ASHTON-TATE Swintec Hayes corona

All Brands are Registered Trademarks.

DO YOU HAVE A SYSTEM THAT IS CONSIDERED NEANDERTHAL?
WUMP WUMP
WE HAVE THE ANSWER!
?
MR. NATURAL'S COMPUTER STORE
2003 MILVIA ST. BERKELEY CA. 94704

BUSINESS SOFTWARE

UTILITIES

safe place to accumulate a lot of data without a backup copy. The RAM disk facility alone is worth the very modest price of either the 2.2B or 2.25 version updates.

A second update, version 2.25, was released in August 1984. This update seems to have all the features of the 2.2B versions, although they are arranged a bit differently in the manual. The only major additions are utilities for hard disk and modem controls. We have not tried either of these.

Do you need either of the updated versions? If you use CP/M at all, a definite yes. The 2.25 version is cheaper so buy it if you have neither. If you have neither a modem nor a hard disk, there is little reason to update from the 2.2B to the 2.25 version.

PROJECT MANAGEMENT

Timeline, Version 2.0

Manufactured by: *Breakthrough Software*
For: *IBM PC, XT, AT, PC 3270 and compatibles*
Suggested retail: *$495.00*
Reviewed by: *Bennett Falk*

Timeline is project management software. If you need to get something completed on time, within budget, and without working everyone involved in the project to death, you should certainly take a look at it.

Using *Timeline* is easy. Begin by setting up a work calendar for the project which determines which hours of which days are available for work. Once the work week is defined, enter resources and costs for the project. *Timeline* allows tremendous flexibility in resource/cost definition: a resource may be an individual, a work group, or a piece of equipment. "Costs" can be fixed, variable, or unit, and for purposes of budgeting may be prorated over the life of a project or imposed at either the start or end of a project.

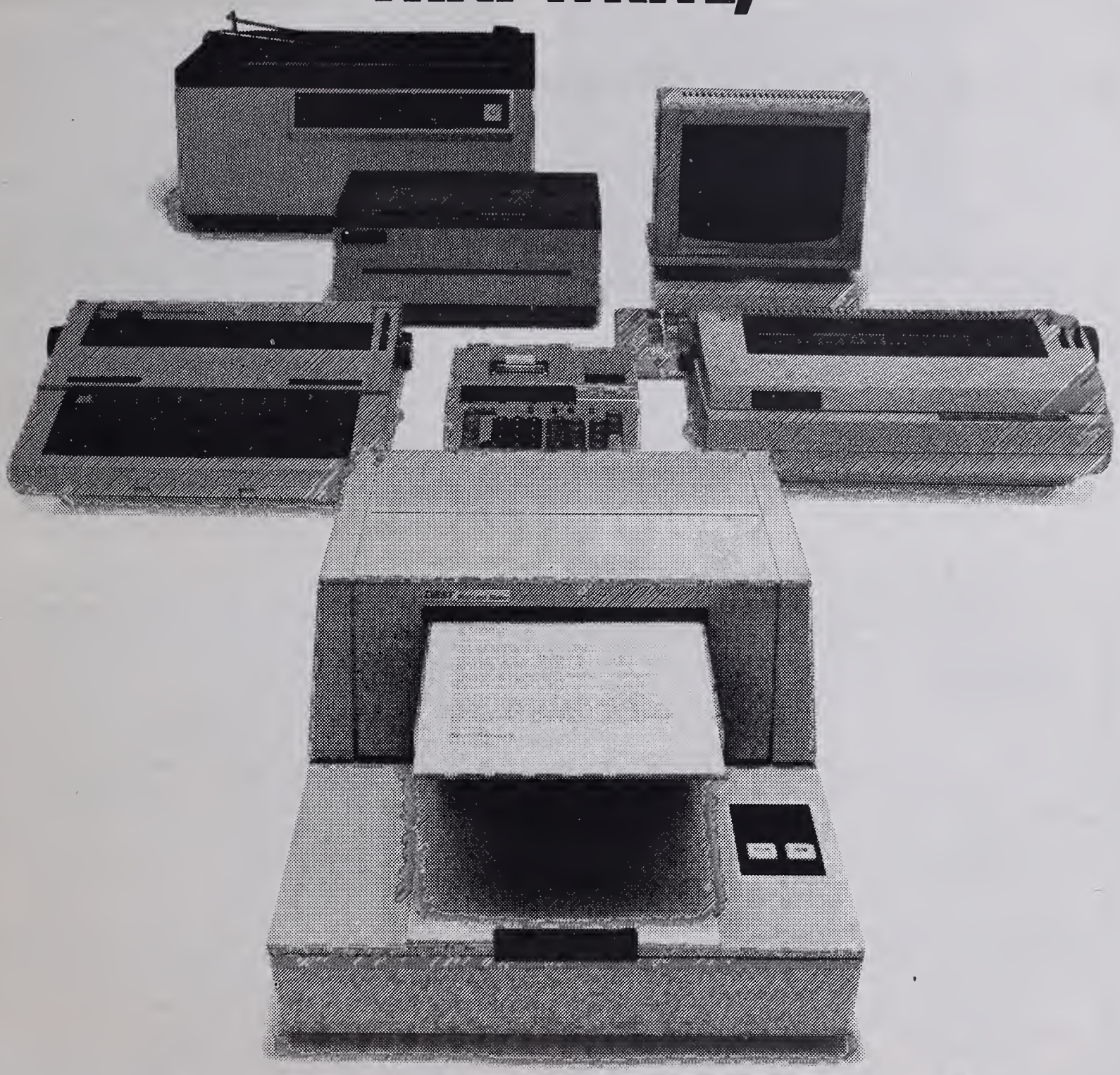
Once the calendar and resources have been established, the tasks that make up the project can be scheduled. Here again there is remarkable versatility. Tasks can have fixed date, ASAP, or ALAP scheduling. Other projects for which there are *Timeline* schedules may be entered as tasks. Dependencies between tasks may be indicated with either joins or partial joins. Once the tasks have been entered, *Timeline* can be used to resolve scheduling conflicts and to perform "resource leveling."

After a project is underway and modifications need to be made to the schedule, *Timeline* will reschedule a project's remaining components taking performance to date into account.

To do all this, *Timeline* smashes some common preconceptions about what kinds of software there are in the world. The most common display *Timeline* users see is a "Gant" chart, which looks like a time-oriented spreadsheet. (You can, of course, get other graphic views of your information, PERT charts and resource histograms, for example.) Unlike spreadsheets, however, data entry for *Timeline* is form driven, as it might be in a good database program. In addition, the reporting facility of *Timeline* produces reports like those a database would produce. Unlike generic database programs, however, *Timeline* is time and resource oriented. It is a unique instrument for managers.

Timeline is copiously documented, offering both on-line help and a spiral bound manual. As might be expected, documentation for project management software is a tricky matter. The world

IF YOUR OFFICE IS FULL OF MACHINES THAT WRITE,



YOU NEED ONE THAT READS.

It's called the Dest WorkLess Station.™

It reads typewritten information right off the page.

And it's fast.

So fast, it reads and transfers eight pages into your office computer in two minutes flat.

Which is quite a feat, when you consider it would take two hours to keyboard them on a good day.

Once you've got the information into the system, you can do just about anything with it.

Including word processing.

Electronic filing.

And electronic mail.

With the Dest WorkLess Station, your people can spend less time feeding information into the computer. And you can spend more time deciding what to do with the results.

Which means, the answer to greater productivity may not be another writing machine.

Just one that reads.

For more information, contact :

Scan-Tech Office Systems
(415) 392-7226

Send me more information about the Dest WorkLess Station.

Name_____

Title_____

Company_____

Address_____

City_____ State_____

Zip_____ Phone # _____

My office computer is a_____

DEST

Authorized Dealer
465 California St., Suite 707
San Francisco, CA 94104

Scan-Tech Office Systems • 465 California Street • Suite 707 • San Francisco, CA 94104 • 415-392-SCAN

The best in the world.

The Hercules™ Graphics Card is the world's best-selling monochrome graphics card for the IBM® PC, XT™ and AT™.

Why? One reason is because a Hercules Graphics card gives an off-the-shelf copy of Lotus™ 1-2-3™ the highest resolution possible on an IBM PC. Plus a parallel printer port and a two year warranty at no extra cost.

Visit your dealer and find out why Hercules is strong on graphics.

Only $499 (Suggested retail price.)

800 Software
940 Dwight Way, Suite 14
Berkeley, CA 94710
(415) 644-3611

Computer Center
1514 University
Berkeley, CA 94703
(415) 845-6366

Computer Tyme
510 Lawrence Expwy #103
Sunnyvale, CA 94086
(408) 732-2186

Los Altos PC
296 State St.
Los Altos, CA 94022
(415) 949-3451

Technika
1025 San Pablo Ave.
Albany, CA 94706
(415) 525-9404

Bill's TV
3427 El Camino
Santa Clara, CA 95051
(408) 296-2243

ComputerLand
117 Fremont St.
San Francisco, CA 94105
(415) 546-1592

Corporate Microservices
217 Sansome St.
San Francisco, CA 94104
(415) 982-1591

Micro Flash
1110 Burnett Ave., Suite K
Concord, CA 94520
(415) 680-1157

Brought to you by Gates Distributing.

Business Computer Mart
5320D Monterey Rd.
San Jose, CA 95111
(408) 225-1510

ComputerLand-Evergreen
2932 Aborn Square Rd.
San Jose, CA 95121
(408) 238-2900

Custer Computers
811 Castro St.
Mt. View, CA 94041
(415) 969-8890

Mindscape Software
1132 B Saratoga-Sunnyvale
San Jose, CA 95129
(408) 996-7727

Computer Biz
4482 Pearl Ave.
San Jose, CA 95136
(408) 723-3363

Computer Store of Oakland
1320 Webster St.
Oakland, CA 94612
(415) 763-7900

Infomax
1 Market Plaza
San Francisco, CA 94105
(415) 543-4151

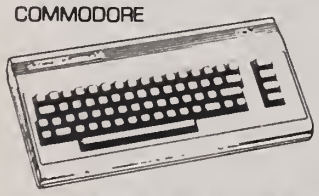
One Point
2835 Mitchell Drive
Walnut Creek, CA 94598
(415) 947-0850

Hercules. We're strong on graphics.

Trademarks/Owners: Hercules/Hercules; 1-2-3, Lotus/Lotus; IBM, XT, AT/IBM.

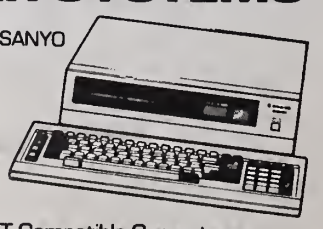
SPECIALISTS IN THESE POPULAR SYSTEMS

COMMODORE



NEC STARLET

SANYO



See the latest, including the Sanyo MBC-775 Color Portable and MBC-885 XT Compatible Computers.
Also on display is the NEC 8401 Starlet Lap Top Computer.

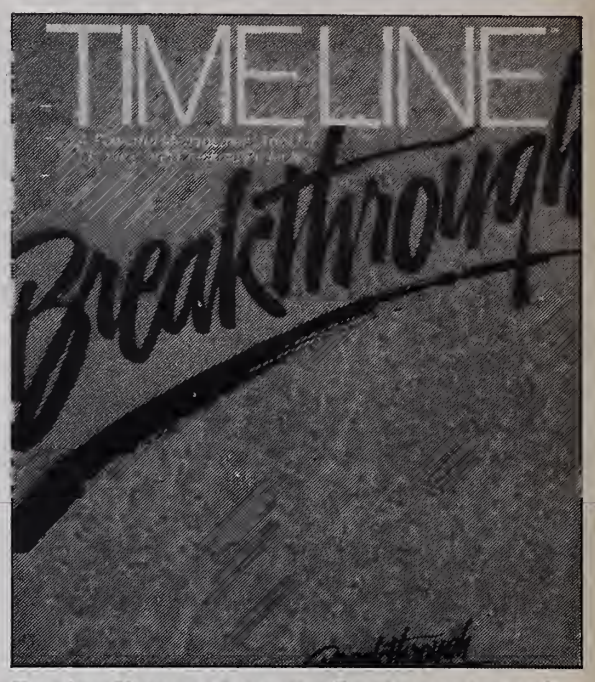
COMING SOON - COMMODORE C-128 and SANYO MBC-675 PORTABLE

We have the latest and largest variety of C-64 Software and Accessories

HT ELECTRONICS, INC.
346 W. MAUDE AVE., SUNNYVALE, CA 94086
(408) 737-0900

BUSINESS SOFTWARE

PROJECT MANAGEMENT



***Timeline Version 2.0* is a significant expansion and refinement of an already good project management package.**

is full of people who manage projects, but most managers are self-trained, with a knowledge of scientific management tools that is chancy at best. *Timeline* is a first introduction to Gant/PERT/histogram styles of management for many of us, and we will learn the management concepts and tools as we learn the software.

Timeline's documentation takes this into account. It is well-written (barring the occasional split infinitive), easy to understand, complete, and indexed. But it is difficult to extract just the command set for *Timeline* from the manual's discussion of what the commands do, how they ought to be used, and what the theoretical entities behind the software are.

The manual has some irksome features. The worst of these is the placement of comments, hints, and warnings in the margins, outside the manual text; the marginal notes are easy to miss, and it is difficult to know when to stop reading the text and check the notes in the margin. The screen images, which feature white print on a red background, can be hard to read. For the 2.0 release of *Timeline*, many of the screen images are reproduced with red lettering on a white background, which is much easier to read. Incidentally, for **Version** 2.0 the manual has been re-organized and re-edited, and its usefulness has improved dramatically.

Timeline does so much and is so novel, it is difficult to identify problems in its design. One potential problem is that it does not handle repetitions of tasks well. Task names must be unique, and if you need to do the same thing several times in the course of a project, it will have to be scheduled under different names. One other potential problem area is that there is no easy way for the outcome of one task to become a resource for another as it must in many manufacturing operations.

It is not easy to get excited about new versions of existing software, but *Timeline* is an exception. The new release, Version 2.0, is a significant expansion and refinement of a package that already did its job well. New users will find it easier to get started with the menu front end and redesigned data entry forms of the new version. Resource management and project costing have become features in their own right rather than support for *Timeline*'s basic scheduling function.

QUALITY COMPUTER PRODUCTS FOR APPLE II, II+, *IIe*, *IIc* and Macintosh*

Jameco ELECTRONICS
Mail Order Electronics - Worldwide

Serving the Computer Enthusiast Since 1974

APPLE* MODEMS *by Prometheus*

New 300/1200 Baud 212A Telephone Modem for your Apple II, II+ and *IIe*. Just plug in — Hayes compatible!

PM1200A . . . $299.95

MAC PAC *for your Macintosh*

Includes: ProModem 1200 external modem, cable and software.

MAC PAC . . . $369.95

OPTION SPECIAL!

Lowest Price!

Includes options processor, display and 64K buffer.

PM-Special..$149.95

Additional Apple Compatible Products

RF Modulator Set
for Apple II, II+ and *IIe*
RF-MOD. $14.95

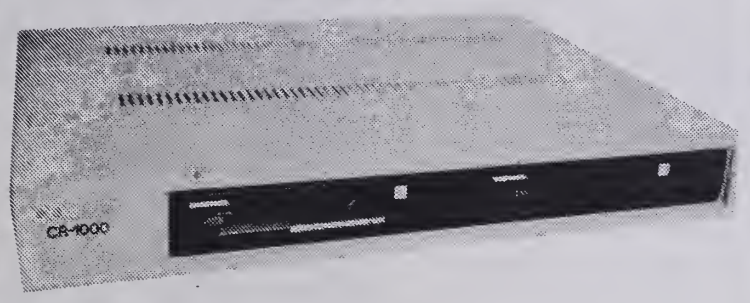
Joystick
for Apple *IIe*
AJS-1. . . . . $19.95

Universal Joystick
for Apple II, II+ and *IIe*
UJS-1. . . . . $29.95

Cooling Fan
for Apple II, II+ and *IIe*
APF-1. . . . . $39.95

Switching Power Supply
for Apple II, II+ and *IIe*
KHP4007. . . $59.95

COMREX Dual 5¼" Floppy Disk Drive for Apple II, II+ and *IIe*



Sleek & slim. Only 55mm thick—half the size of a standard Apple* drive. 286K total formatted capacity (143K each drive): twice the space for data. A special pulse motor makes it accurate, reliable and fast. Color matches Apple Computer. Complete with connectors—just plug into the disk controller card (included).

Each ADD-1000 includes: Dual 5¼" disk drives, console, controller card, multi-disk filer program, and aluminum protective cover. Complete with instructions.

• No. of tracks: 35 • Seek time: 40 ms • Density: 48 TPI • Format: Single-sided, single-density • Size: 14.9"W x 2.1"H x 10.1"D • Weight: 10.1 lbs.

ADD-1000. . . . . $219.95 ea. or 2 for $399.95

APPLE™ Compatible 5¼" Disk Drive and Controller Card

• Uses Shugart SA390 mechanics • 143K formatted storage • Color matches Apple Computer • Works with Apple Controller or other Apple-compatible controllers (ACC-1) • Complete with connector — just plug into your disk controller card • 35 tracks • Size: 6"W x 3½"H x 8-9/16"D • Wt.: 4¼ lbs.

ADD-514 (Disk Drive) $149.95

ACC-1 (Controller Card) . $49.95

APPLE™ Compatible 5¼" Half-Ht. Disk Drive

• Uses Chinon Pinch-type mechanics • 143K formatted • 35 tracks • Super quiet • Works with Apple Controllers or other compatibles (ACC-1) above • Complete with connector — just plug into your controller • Size: 5¾"W x 1⅝"H x 8"D • Wt.: 4 lbs.

ADD-12. . . . $129.95

APPLE™ *IIc* Compatible 5¼" Half-Ht. Disk Drive

• Same specs as ADD-12 (above) except no controller necessary.

ADD-IIc. SALE! $129.95

80-Column plus 64K RAM for your APPLE *IIe**

Now you can double the memory capacity and get an 80-column display format for your APPLE *IIe** computer at an affordable price. Just plug the JE864 card into your APPLE* and expand your display to 80 characters per line. Perfect for word processing. The JE864 also features 64K bytes of additional memory to allow programming not possible with standard APPLE *IIe** computers. Complete documentation included.

Board: High density board design squeezes 64K bytes of RAM onto a 2½" x 4½" board • Fully tested to assure proper operation.

Uses: Word processing — displays 1000 more characters per screen • Extra memory allows running of extremely large programs • Ultra High Resolution Graphics capability.

JE864. . . . . $79.95

APPLE Keyboard and Case for Apple II and II+

Special Functions!

KEYBOARD (KB-A68):
• 68 Keys • 15-Key Keypad • Direct connection with 16-pin ribbon connector • Special features include automatic-key repeat, cursor control/numeric keypad, 46 predefined function keys (Applesoft™, DOS commands and CP/M™), 10 user-definable keys *and more!* • Color (keys): white/grey • Size: 14½"L x 5½"W x 1½"H

CASE (EAEC-1):
• Accommodates KB-A68 • Pop-up lid for easy access • Fits power supply *and* motherboard • Size: 15½"L x 18"D x 4¼"H

Part No.	Description	Price
KB-EA1	Apple Keyboard and Case.	$119.95
KB-A68	68-Key Apple Keyboard only.	$ 69.95
EAEC-1	Expanded Apple Enclosure Case only.	$ 49.95

APPLE* COMPATIBLE CARDS

More Cards Available!

Key: a = Apple II or II+
b = Apple *IIe*

16K RAM Card
ARC-16K (a). $39.95

Z-80 CP/M Card
AZ80-1 (a,b). $49.95

EPROM Burner Card
AEB-2 (a,b). $69.95

80-Column Card with Soft Switch
A80-C (a). $74.95

Super Serial Card
ASSC-P (a,b). $99.95

$10.00 Min. Order - U.S. Funds Only
Calif. Residents Add 6½% Sales Tax
Shipping - Add 5% plus $1.50 Ins.
Send S.A.S.E. for Monthly Sales Flyer!

Send $1.00 Postage for your *FREE 1985 JAMECO CATALOG*
Prices Subject to Change

MasterCard · Jameco ELECTRONICS · VISA*

Mail Order Electronics - Worldwide

1355 SHOREWAY ROAD
BELMONT, CALIFORNIA 94002
Phone Orders Welcome (415) 592-8097
Telex No. 176043

10/85

*APPLE, APPLE II, II+, *IIe*, *IIc* and Macintosh are registered trademarks of APPLE Computers

GRiD Portables For The Light Division

The unique GRiD Compass portable personal computer will be used as part of a new command and control system by the U.S. Army's 9th Infantry Division, which serves as a high-technology testing outfit. The GRiD was the first personal computer to go into Earth orbit on the space shuttle. It uses a very costly electroluminescent flat panel display with high resolution and a massive non-volatile RAM based on magnetic bubble technology. "Non-volatile" means that the memory stays intact when the unit is turned off. The Army's GRiDs will be TEMPEST-qualified, meaning they do not put out any radio-frequency leakage that could be detected or deciphered by the enemy. Most computers emit signals that can be intercepted by sensitive receivers, as you may have noticed when your Commodore jams your TV set in the next room. *Jane's Defense Weekly*, a military trade journal published in London, reports that the 9th Infantry will network its GRiDs over radio and telephone lines. "Data entered on any individual machine automatically updates division and subordinate unit databases... The system is designed to have redundant data storage so that no information is lost should an individual unit be destroyed."

Another version of the GRiD has been chosen by the super-secret National Security Agency as the first portable computer approved for transmission of classified data. The machine incorporates sophisticated encryption built into ROM, but it will be commercially available to Government agencies and contractors. — *Michael Markowitz*

Compute Of Ill Repute

All My Children, ABC's top-rated daytime soap opera recently featured a cameo appearance by the Apple IIc. In the story, the madam running a high-class prostitution ring used the friendly little computer to keep business records, including a list of her most valuable clients. One of the girls, with dreams of starting her own business, steals the floppy disk with the all-important list of names. When last observed, the disk had been slipped secretly into her boyfriend's sport coat pocket, and was on its way to the dry cleaner.

Will a critical sector be wiped out by lint? Will the theft of data be discovered? How much did Sculley pay the producers to feature the cute but slow-selling machine on America's most popular soap opera? For the answers to these and other questions, don't depend on this column.

The preceding note is provided as a service to readers who are unable to watch daytime TV due to other commitments. — *Michael Markowitz*

PHOTO: MATT HERRON

"Hackers," a half-hour documentary exploring the personalities and ethos of the computer revolution's pioneers, will be shown on KQED (Channel 9) in the Bay Area on Tuesday, August 27 at 7 pm, Wednesday, September 4 at 7:30 pm, and Wednesday, September 25 at 8:30 pm. Featuring footage shot at last year's Hackers' Conference, "Hackers" was produced by San Francisco's Fabrice Florin and incorporates interviews with computer heroes such as Steve Wozniak, John Draper (Cap'n Crunch), Lee Felsenstein, Bill Budge and Bill Atkinson. Check it out.

PHOTO: f. STOP FITZGERALD

ANDREW FLUEGELMAN

"I think this is just the next adventure for a lot of us to get into...I know the intellectual excitement the [computer] has caused for me. It's really been a rejuvenation, and anything that gets you that pumped up has got to be something that you can use in a good way.

"I also think that people who do get excited about computers and involved in all this are almost uniformly intelligent, interesting people. I never have been as socially involved, as interconnected with as many different kinds of people, as when I started getting involved with computers...I think that the easier it is for people to express themselves, and to share their views with others, that's got to be a good democratic force.

"It's great to go along for 40 years and suddenly find your life still changing, and new things happening. It makes you look forward to what's going to happen when you're 60, what's going to happen when you're 80, because I really believe there are still changes to come."

— *Andrew Fluegelman, February 1985*

When we interviewed Andrew Fluegelman earlier this year (Issue #9), he was embarking on the next phase of a career spent helping people communicate and get their jobs done better. He had co-founded the user-oriented *PC-World* and *Macworld* with David Bunnell to, he said, "support people who bought into this system." He was about to undertake further projects in software publishing, expanding upon the continuing success of his telecommunications program *PC-Talk*, written in the early days of the IBM PC. He'd been writing a book at the time with a co-author on the East Coast, discovered that there was no software in existence that would allow them to swap text files over the telephone lines, and decided to write the software himself.

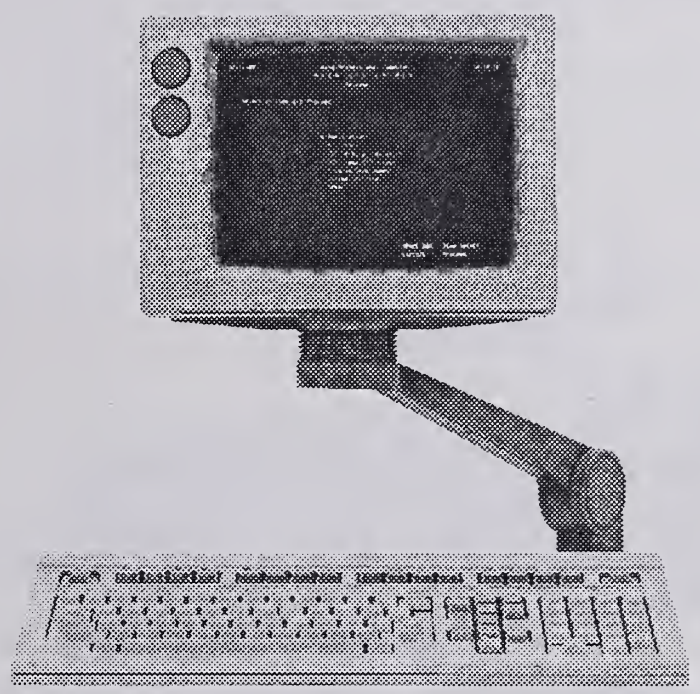
Having written *PC-Talk*, and being all too familiar with the pitfalls of publishing, he devised the Freeware marketing concept to distribute it, based on the notion that the software, while copyrighted, should be freely circulated and copied and that satisfied users should send him $35. Not only was this novel approach financially successful, to Fluegelman's surprise, but it also resulted in an avalanche of suggestions from users for potential improvements in the software. He christened this feedback "Freeback" and duly incorporated many of the suggestions into the current version, *PC-Talk III*. He also noted that he was regularly accosted at conventions by people waving checks for $35.

This whole picture is hard to reconcile with the currently reported facts: that Fluegelman's car was found with a note near the Golden Gate Bridge on July 6, that his family conducted memorial services on July 14 and placed a death notice in the *New York Times* July 15. The *San Francisco Examiner* and *Chronicle* reported that the police department in Tiburon, where Fluegelman lived and worked, is treating his disappearance as a missing-person case; contacted at presstime, the department declined to discuss the situation.

The truth may never emerge. What's evident is that the computer community has lost one of its most positive forces. Our deepest sympathies to Mr. Fluegelman's family and friends.

What would you gain if your computing system never went down?

- **Time**
- **Money**
- **Coffee Breaks**



These are the ideas you will be considering when you depend on Kelley Information Services for all your computing needs.

Kelley — The Service Specialists

- **Systems Analysis—**
  You tell us what you and your employees need and we will design the perfect system for you.
- **Custom Programming—**
  You describe the flow of information in your company, and we will program a system that will do exactly what you have always dreamed of.
- **Telephone Support—**
  If you or your employer run across a problem, you just give us a call anytime and we will get you back on track right away.
- **Before and After Training—**
  You and your employees get the most complete and easy to understand introduction so that you will be up and running right from the start.
- **On Site Repair—**
  The quickest service available at the most competitive price in the Bay Area.

Once you buy into Kelley, Kelley invests in you.

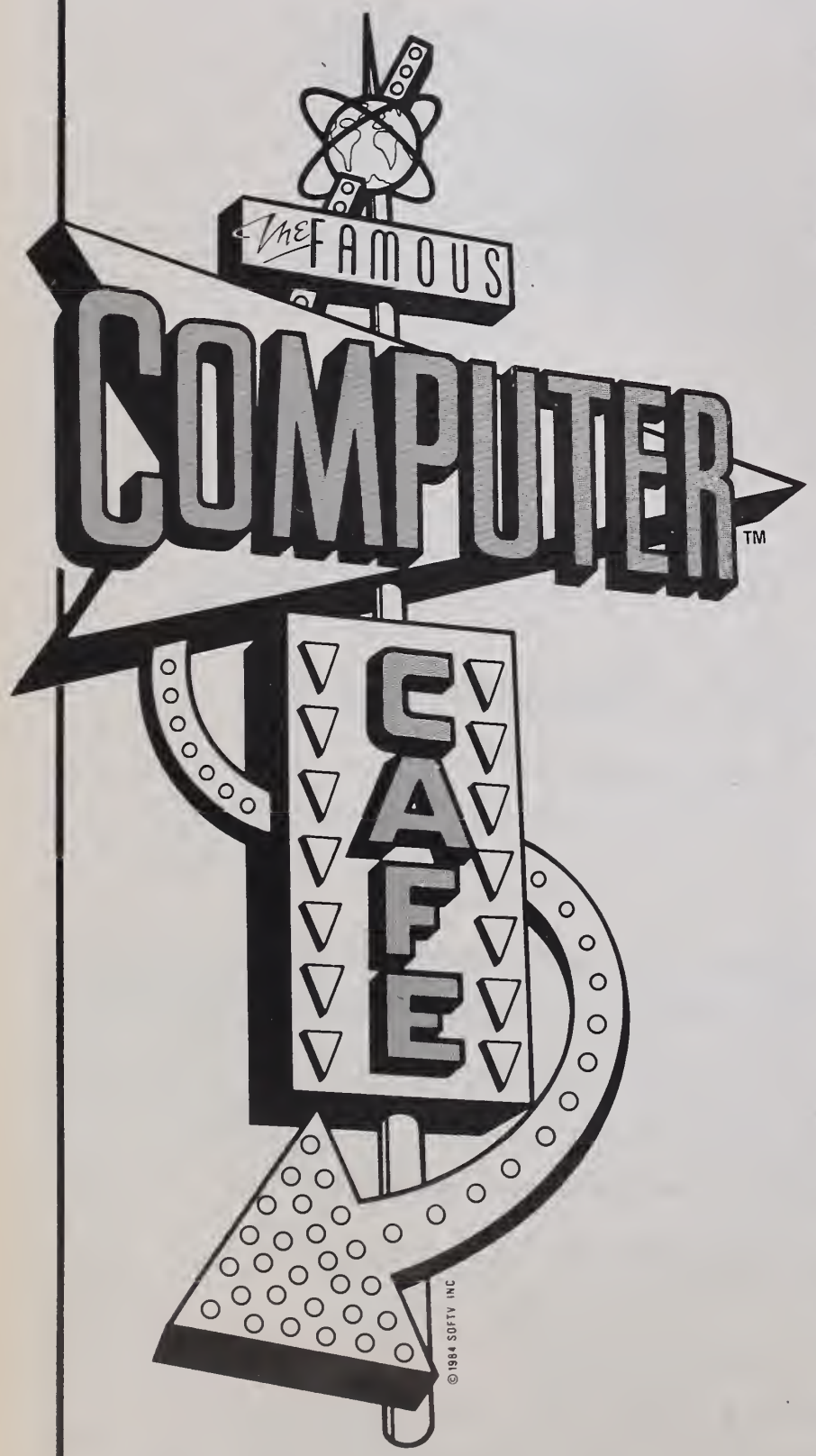
KELLEY INFORMATION SERVICES, INC.

861-3068

1325 HOWARD ST., S.F.

*N*ow *S*erving at
THE FAMOUS COMPUTER CAFÉ

Personal Computer Talk Radio . . .



IN LOS ANGELES, CA
KIEV 870 AM, Mon-Fri, 3:30 pm
KFOX 93.5 FM Mon-Fri, 7:30 am & 6:00 pm
IN SAN MATEO, CA
KCSM 91.1 FM, Wed, 7:00 pm

VISITORS TO THE FAMOUS COMPUTER CAFE

Christopher Cerf (author)...**Ray Bradbury** (author)...**John Reese** (Tronix/Monogram)...**Trip Hawkins** (Electronic Arts)...**Carey Liu** (High Technology)...**Gene Roddenberry** (Star Trek)...**Fred D'Ignazio** (New Tech Times)...**Edwin Moses** (Olympic gold medalist)...**Herbie Hancock** (jazz musician)...**Robert Moog** (Kurzweil)...**Bill Gates** (Microsoft)...**Jack Tremiel** (Atari)...**Don Estridge** (IBM Entry Systems Division)...**Bill Bowman** (Spinnaker)...**Ed Auer** (CBS Software)...**Frank Schwartz** (Simon and Schuster)...**Doug Adams** (*Hitchhiker's Guide to the Galaxy*)...**Peter McWilliams** (*Personal Computers and the Disabled*)...**John Dvorak** (Infoworld)...**Jim Zuber** (Blue Chip Software)...**Dr. Timothy Leary** (software author)...**Jack Anderson** (syndicated columnist)...**Jan Davidson** (Davidson and Associates)...**Stewart Brand** (Whole Earth Software Review)...**Stewart Alsop** (P.C. Letter)...**Steve Levy** (*Hackers*)...**Paul and Sarah Edwards** (*Working From Home*)...**David Jonson** (Doctor Disk)...**Mark Cantor** (Macromind)...**James Cavuoto** (Lasers and Applications)...**Joe Billings** (Sight and Sound)...**Sa Tara Singh Khalsa** (Kriya)...**Adam Chowaniac** (Commodore)...**Bruce Davis** (Imagic)...**Terry Thormodesgaard** (Thor Agency)...**Jeff Rona** (Roland)...**Barbara Like** (Clear Systems)...**Mike Carbonne** (Simonton Industries)...**Larry Saltzman** (Assoc. of Entertainment Ind. Computer Professionals)...**Michael Tomczyck** (*Home Computer Wars*)...**Mark Brownstein** (author)...**Chet Pipkin** (Belkin Components)...**Richard and Ron Grant** (Auricle)...**Bobby Kotick** (Arktronics)...**Charles Humphrey** (Computer and Software News)...**Charlie Kellner** (Lucasfilm)...**Bill Atkinson** (Apple Computers)...**Tom White** (The Electronic University)...**Dr. Alfred Bork** (UC Irvine, Educational Technology)...**Jackie Massing** (Silicon Valley Computer Camp)...**Ira Wolfman and Pat Berry** (Enter Magazine/Childrens Television Workshop)...**Doug Heineman** (Xerox)...**Ed Thompson** (Harcourt, Brace, Jovanovich)...**Boyd Pearce** (Data General)...**Barbara Elman** (*Word Processing News*)...**Ron Staley** (Computer Aids for the Disabled)...**Ken Yankelevitz** (McDonnell Douglas)...**Bert Gader and Manny Nodar** (Hillhouse)...**Bart Rhoades** (PC World)...**Larry Magid** ("The Computer File," L.A. Times)...**Jim McCullaugh** (Software Merchandising)...**Wolf Schneider** (Software Merchandising)...**Colin Thompson** (Commander Magazine)...**Barbara Preissel** (PCMA)...**Dan Kunz** (Commodore/Young Astronauts Council)...**John Williams** (Sierra)...**Kevin Blaker** (Long Beach Micro)...**Jim Holmes** (TUGNET)...**Don Fenstermaker** (Omni Unlimited)...**Chuck Spears and Ira Belsky** (Spear Securities Inc.)...**Rob Williamson** (United Software Technologies)...**Mike Wallace** (The Learning Company)...**Bob Botch** (Epyx)...**Claudia Cohl** (Family Computing)...**Jim Johnson** (Human Edge Software)...**R.J. Mical** (Commodore Amiga)...**Rick Grolnick** (Neosoft)...**Craig Nelson** (Epyx)...**Steve Ditles** (*The Digital Deli*)...**Dave Fradin** (First Byte Software)...**Arnold Epstein** (Loki)...**John Shirley** (Microsoft)...**Steve Burakoff** (Layered, Inc.)...**Gordon Nacarrato** (Gordon and Grimsley's, Aspen, CO)...**Larry McGovern** (Serviceland)...**Richard Sandza** (Newsweek)...**Steve Roberts** (USA Today)...**Peter Huber** (Personal Computer Support)...**Andrew Rev** (Echo)...**Randy Battat** (Apple Computers)...**David Larson** (Apple Computers)...**Fred Gladney** (C.W. Gladney and Associates)...**Jeff Garbers** (Microstuff)...**Roger Mass** (Software Supermarket)...**Jerry Schwartz** (Computers for the Blind)...**Bud Grove** (Apple Users Group)...**Rawson Stoval** (New Tech Times)...**Brent Seltzer** (Compututor)...**David Cole** (Ziff Davis)...**Steve Axelrod** (The Axelrod Agency)...**Martin Schmitt and Kai Krauss** (DDD Software)...**Charlie Kreitzberg** (Cognetics Corporation)...**Sheldon Adelson** (The Interface Group)...**Mark Yamagata** (Radio Shack)...**Gordon Gorenson** (Wico)...**Howard Goldberg** (Playnet)...**Kai Nishi** (Microsoft)...**Al Vezza** (Infocom)...**Merritt Lutz** (Informatics)...**Rich Lionetti** (Micro D)...**Bill Slapin** (Computer Merchandising)...**Amy O'Brien** (The New Literacy)...**Kit Galloway and Sherie Rabinowitz** (The Electronic Cafe)...**Ted Weiss** (AT&T)...**Bob Leff and David Wagman** (Softsel)...**Dr. Robert Reitman** (Psycomp)...**Clare Whirley** (AT&T)...**Walt Corwin** (AT&T)...**Ron Posner** (Ashton Tate)...**Stewart Bloom** (Datasoft)...**Peter Quinn** (Apple Computers)...**Amy Schnapper** (Springboard)...**Nalini Kouwenhoven** (The Micro Show)...**Larry Miller** (PCMA)...**Jack Barton** (Computerland)...**Cynthia Mason** (Seldin and Associates)...**Michael Brinda** (New Horizons Computer Learning Center)...**Carol Dysart** (Computer Resources)...**Ron Kaplan** (Zebreck, Levin and Mepos)...**Brian Kadison** (Arthur Andersen)...**Andrew Tobias** (MECA software author)...**Jay Howard and Steve Arthur** (PDS Sports)...**Ron Gunning** (Omnilogic)...**Carl Evans** (Vervan)...**Michael Kalin** (Software Toolworks)...**Andreas Langenscheidt** (Langenscheidt)...**Cliff and Doug Mitchell** (Bits and Bytes)...**Arnie Uretsky** (The Learning Lab)...**Farley Malorrus** (computer astrologist)...**Nick Villiers** (Future Forecasts)...**Bob Glaser** (Microsoft)...**Bill McGee** (Microsoft)...**the Honorable Rick Brown** (Santa Barbara Municipal Court)...**Kristin Morioka** (OWI)...**Angela Blum** (Computer and Software News)...**Steve Roth** (author)...**Steve Beck** (Beck Tech)...**Eddie Goldfarb** (Eddie Goldfarb Associates)...**Sheila Kinney** (Henson Associates)...**James Copland** (Commodore)...**Bruce Krogstad** (MCI)...**Randy Cade** (Epson West)...**Michael Mock and Chris McDivitt** (Indus Systems)...**David Em** (computer artist)...**Christopher Miles** (Crystal Network)...**Joel Berez** (Infocom)...**Jan Kugel** (Seiko)...**Robert Wood** (author)...**James Levy** (Activision)...**Phoebe Hoban** (New York Magazine)...**Sid Meyer** (Micropro)...**George Dell** (Wico)...**Dennis Caswell** (Epyx)...**Fernando Flores** (Hermanet)...**Doug Garr** (Video Magazine)...**Rod Firestone** (Musician)...**Benjamin Krepack** (Journalist)...**Bob Foster** (Telos Software)...**Bill Salkin** (ABC Computing)...**Ralph Weinger** (Color Systems Technology)...**Jay Teitzell** (Animator, Digitizing)...**Chuck Braverman** (Director, Producer)...**Gary Goldberry** (Media Source)...**Bary Greenberg** (Celebrity Connection)...**Dr. Hershel Toomin** (Biofeedback)...**Larny Mack** (Consultant)...**Steve Laff** (Friendly Computers)...**Raymond Marks** (MCI Mail)...**Ron Barker** (Montage Computers)...**Brent Miles** (Miles Computing)...**Modie Katz** (Softkat)...**Stephan Smith** (Business Computer Network)...**Gilbert Yabion, John O'Connell** (Lumeni)...**Rachel Talalay** (Computers in Film Accounting)...**Donny Osmond** (Entertainer)...**Dorothia Atwater** (Author)...**Marc Schoenberg** (Computer Dating)...**Roy Nierenberg** (Developer)...**Judith Hubner** (NCII)...**Fred Brown** (Brown Book)...**George Morrow** (Morrow Designs)...**Peggy Glen** (Aames & Allen)...**Valerie Hood** (Consultant)...**Kim Schuette** (*The Book of Adventure Games*)...**Mis McCroskie** (The Book Company)...**Mary Poplin** (Computer Aptitude Test)...**Fredrick Pletch** (Win Center)...**Geoff Levin** (Composer)...**Dr. John Alswang** (Consultant)...**Tom Nelson** (VIP Technologies)...**Mark Zacovic** (Expercamp)...**Bill Broughton** (Composer)...**Tom Lazear** (T & W Systems)...**Bill Barden** (Publisher)...**Gary Handel** (Mac Office)...**Taylor Barcroft** (MacBriefs)...**Judith McCullough** (VDT's & Health)...**Terry Myers** (Quarterdeck Office Systems)...**Robert Zumberge** (author, "Geometry")...**Steve McGovern** (manager, Radio Shack)...**Jon Birdsey** (Interactive Data Corporation)...**Bill Broughton** (TV and movie soundtrack composer)...**Don Ackerman** (WMD Distributors)...**Mike Rich and Kathy Hulka** (Media Computing)...**J.J. Strano** (computer psychologist)

PHOTO: ANN SUMMA

Computer Cafe Welcomes New Addition

Congratulations to Ellen and Michael Walker of L.A.'s Famous Computer Cafe talk show on the arrival of their new baby Zoe. She's being encouraged in her first broadcasting venture by her parents and their Cafe co-host Andy Velcoff (r).

Corrections

Great were the editorial wailings and gnashings of teeth in the MicroTimes office during the last month, inasmuch as our last issue seemed to have more than its fair share of errors, typos, and oversights. Herewith we attempt to set the record straight.

In our cover story on Macintosh upgrades, there was a discussion of the possibility that unscrupulous dealers might make representations to their customers that they were getting a factory-authorized Apple upgrade when in fact a third-party board was being installed. Due to a particularly unfortunate editorial lapse, a sentence referring to SuperMac Technologies of Mountain View was juxtaposed with this discussion, leading some readers to draw the erroneous conclusion that SuperMac engaged in such practices.

We did not foresee this possible inference and never intended that it should take place. In fact, SuperMac, which does indeed manufacture third-party 512K boards and sell them to retailers and dealers, packages and labels its boards in a highly distinctive manner impossible to confuse with Apple's. Further, SuperMac includes a mail-in warranty card which is given to the customer upon installation of the board; the company warrants materials and workmanship on the entire board for an entire year, as contrasted to Apple's 90 days; SuperMac also will repair or replace defective SuperMac ICs free of charge, and repair or replace free of charge any part of the Macintosh that fails as a result of defects in the SuperMac ICs, for the lifetime of the computer. This warranty is among the most comprehensive in the industry.

We apologize to Mr. Steve Edelman of SuperMac and to his valued customers and dealers for allowing this misunderstanding to arise.

In the portion of Retail/Service News that dealt with JDR Microdevices, a reference was made to "a complete line of oscilloscopes, ranging in size from a battery-powered handheld model to a heavy-duty 35 mHz unit." Gene Sakalay of JDR points out that the sentence should refer to "a complete line of electronic test equipment," that there's no such thing as a battery-powered handheld oscilloscope, and that anyway it should say "35 MHz."

In Buyer's Guide, the telephone number for Southworth Music Systems, which makes a MIDI-based music package for the Macintosh, is listed incorrectly. The real number is (617) 497-7522.

And last but not least, the voice number for The WELL (Whole Earth 'Lectronic Link), was also incorrect. If you want to talk to a human being about getting on The WELL, call (415) 332-4335. The modem number, (415) 332-6106, was correct.

SATURDAY SEPTEMBER 7TH

COMPUTER BARGAIN SHOW

BAY AREA COMPUTER SWAP®

FEATURING

- ☐ Huge Savings
- ☐ Millions in Merchandise
- ☐ Consignment Table
- ☐ Over 150 Exhibitors
- ☐ Door Prizes
- ☐ Close Out Prices

FANTASTIC SAVINGS ON

- ☐ Personal Computers
- ☐ Printers
- ☐ Monitors
- ☐ Disk Drives
- ☐ Modems
- ☐ Paper
- ☐ Printer Ribbons
- ☐ Computer Furniture
- ☐ Education Software
- ☐ Plug In Boards
- ☐ Add On Memory
- ☐ Utility Software
- ☐ Game Software
- ☐ Hobbyist Items
- ☐ IC's
- ☐ Cables
- ☐ Personal Software
- ☐ Business Software
- ☐ Computer Books
- ☐ Diskettes
- ☐ Print Wheels
- ☐ Joy Sticks
- ☐ Plotters
- ☐ Spreadsheets
- ☐ Hard Disks
- ☐ Complete Systems

The Bay Area Computer Swap is Saturday, September 7, 1985.
Hours are from 10 a.m. to 5 p.m.
Take Hwy. 101 to Hwy. 92 west. Exit at Delaware
and follow the signs to 2495 S. Delaware.

Admission is $5.00. – Children under 12 free

BAY AREA COMPUTER SWAP®

SAN MATEO COUNTY FAIRGROUNDS
SAN MATEO, CALIFORNIA

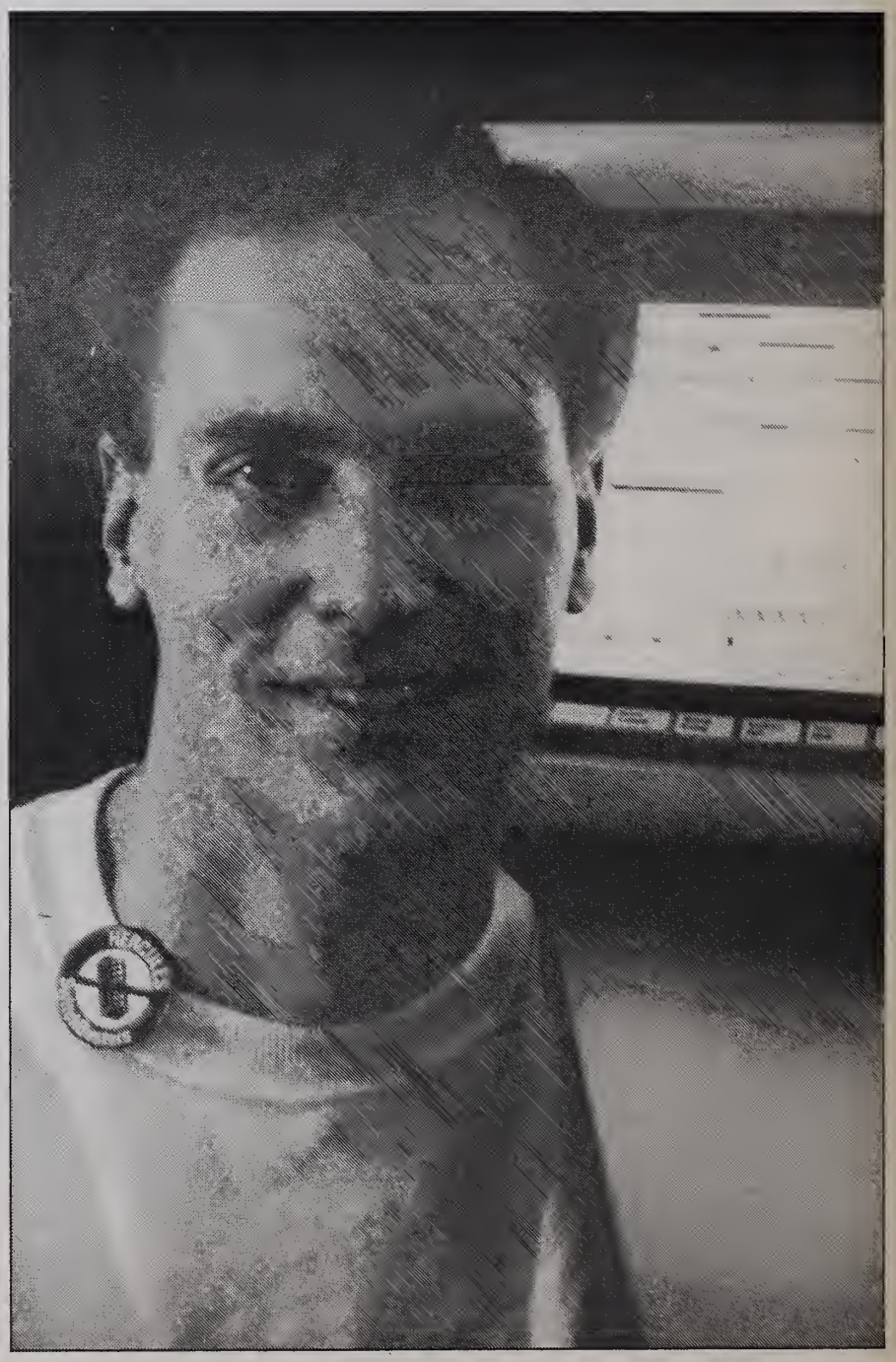
SATURDAY, SEPTEMBER 7th

FOR EXHIBITOR AND SHOW INFORMATION
CALL (415) 340-0104
MICROSHOWS • 1209 Donnelly, Suite 203 • Burlingame, CA 94010

Winning In IBM's World—

Hercules Computer Technology

By Mary Eisenhart
Photos: Pat Johnson Studios



"The myth was promulgated in the early days of the IBM PC that nobody could really sell against IBM. Hercules is living proof that you can *sell against IBM."*
— Kevin Jenkins, *President*
Hercules Computer Technology

"MAX!" The distress cry echoes down the hallway of the nicely-appointed offices of Hercules Computer Technology in Berkeley. An adolescent dog (a Staffordshire Bull Terrier, we're later informed), having made a break for it while on his morning constitutional, dances triumphantly around the writer/photographer delegation emerging from the stairs.

"He's *supposed* to be obedience trained," laughs his pursuer, scooping up the errant Max and ushering us into the office, where Max's cohort Pinkie is curled decorously at the receptionist's feet.

We're here to interview Max and Pinkie's proprietor, Kevin Jenkins, the 29-year-old president and co-founder of Hercules. Started three years ago by Jenkins and his partner Van Suwannukul, Hercules manufactures two products: the flagship of the line, the monochrome Hercules Graphic Card, and its companion, the Hercules Color Card. Both products are geared toward a mass market of IBM PC users, and they're expected to generate $60 million in sales this year. The cards outsell their IBM equivalents and are generally considered the industry standard.

Jenkins, however, didn't start out his career as a computer entrepreneur. Five years ago he was publishing a San Francisco art-and-music magazine called *Boulevards*. While it never achieved blockbuster status commercially, *Boulevards* was critically acclaimed and artistically influential. And, as Jenkins explains, this experience proved invaluable in successfully charting a course for Hercules through the treacherous waters of IBM's market.

It's quite a switch from publishing a magazine to running Hercules Computer. What happened?

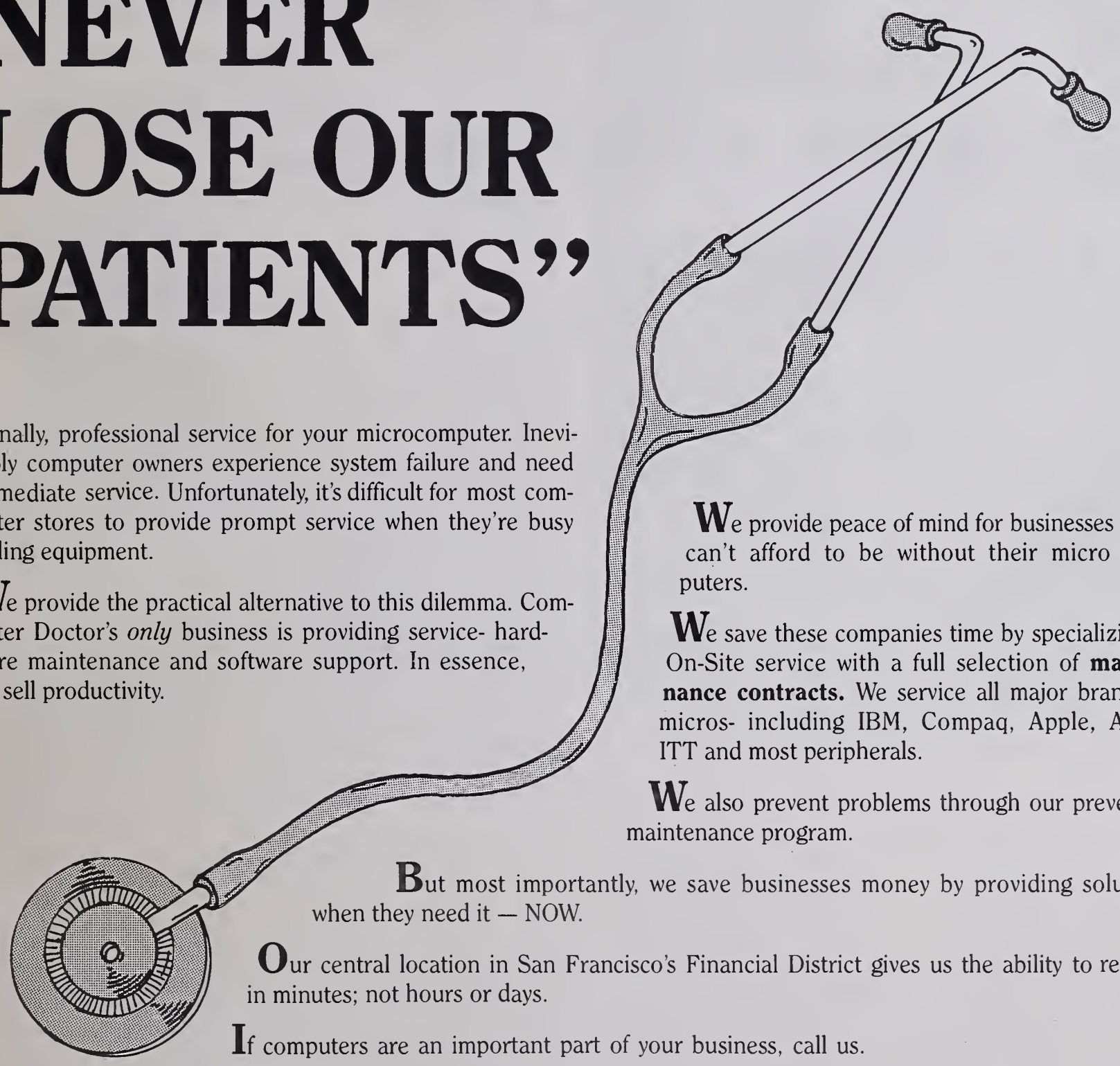
I decided I didn't like being poor. I have an accounting degree from Berkeley, and I got it because I thought that with the training of a CPA I'd be better equipped to be successful in business. I always wanted to run my own business and be independent and all that sort of thing.

So I just decided to start one, and the first thing that occurred to me was to start a magazine. I made a fatal flaw in assuming that if I put out a decent product people would like it and support me in my endeavor financially. And that wasn't the case — *Boulevards* was really aimed at a very small market without much buying power.

What market was that?

I guess graphic artists and punk

"WE NEVER LOSE OUR PATIENTS"



Finally, professional service for your microcomputer. Inevitably computer owners experience system failure and need immediate service. Unfortunately, it's difficult for most computer stores to provide prompt service when they're busy selling equipment.

We provide the practical alternative to this dilemma. Computer Doctor's *only* business is providing service- hardware maintenance and software support. In essence, we sell productivity.

We provide peace of mind for businesses that can't afford to be without their micro computers.

We save these companies time by specializing in On-Site service with a full selection of **maintenance contracts.** We service all major brands of micros- including IBM, Compaq, Apple, AT&T, ITT and most peripherals.

We also prevent problems through our preventive maintenance program.

But most importantly, we save businesses money by providing solutions when they need it — NOW.

Our central location in San Francisco's Financial District gives us the ability to respond in minutes; not hours or days.

If computers are an important part of your business, call us.

We're the Doctors that don't mind house calls.

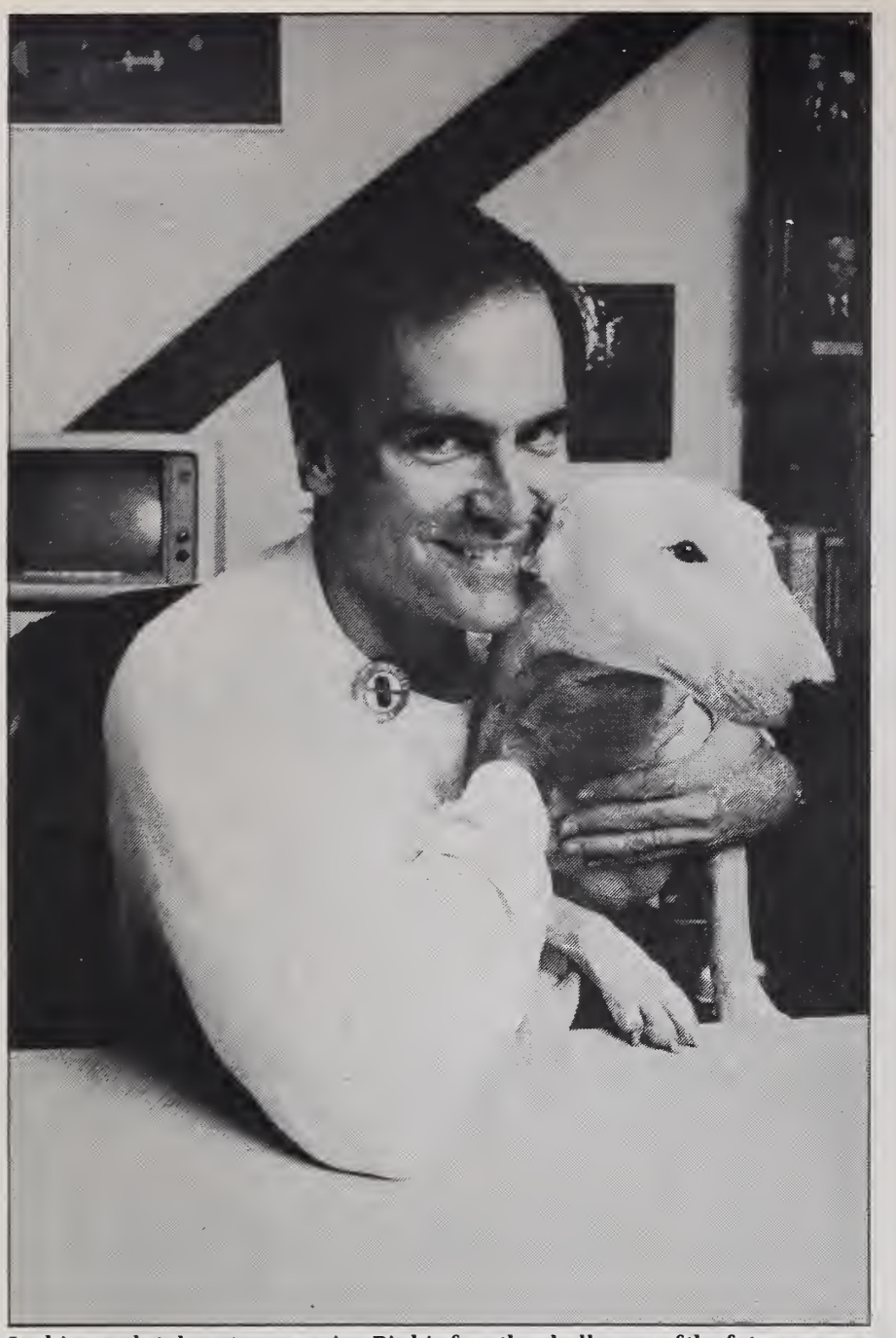
COMPUTER DOCTOR℠

OF SAN FRANCISCO

660 SACRAMENTO STREET, SF, CA 94111

[362-8887]

See Us At The PC Faire On Sept. 5-7 At Booth #1716



Jenkins and stalwart companion Pinkie face the challenges of the future resolutely: "Our mandate is to make the best products that we can, knowing what we know."

"Advertising and dealer promotions and sales forces are really meaningless if your product isn't truly useful. What that means from a practical point of view is that small companies like ours must link with products that join together."

rock musicians! [Laughs] Of San Francisco! Must've been about 5000 people in the target market, which was about the circulation of *Boulevards*. But it was successful in some ways — it really promoted a graphic art style which survived till now, widely copied and widely imitated.

And I thought for me it was a tremendous experience in how to run a business. But after that, September of '81, I realized that I'd been poor for too long, and so I set about to start another business in an area where I could make some money.

There were a lot of companies that had been successful in the Apple II area, making add-on boards for the various functions, video and memory and stuff like that. The Apple II board-level market at that time was a little old, but the IBM PC was being talked about and was announced in October of '81, with the same kind of open bus architecture that the Apple II had. So at that point I knew I wanted to start a company manufacturing PC boards for the IBM.

Had you worked with computers when you were at Boulevards?

No, I hadn't. I started a very intense self-education process. I built a little kit, read a lot about computers, and talked to anybody I could that knew anything about it. I gained enough of a working knowledge to know what might succeed and what might fail.

But the luckiest thing for me, besides the fact that I happened to be available at the time the IBM PC was announced, was that through a friend I met my partner, Van Suwannukul, who was working on his Ph.D. in EE at Cal at the time.

He had bought an IBM PC, one of the first to be sold in the area, with the intention of writing a word processor so that he could write his thesis in Thai. You need a certain amount of resolution to resolve Thai characters, and the IBM color card, which was the graphics board that was offered at the time, did not have enough resolution.

So he realized immediately that there was a need for a higher-resolution graphics board, and IBM sold a monitor that was nicely suited for high-resolution monochrome graphics. So he had the product idea, and he's an absolutely brilliant designer. I brought along my paltry efforts at marketing and management.

And that's how we launched Hercules. It was just the two of us, same old story, two guys in a garage. He designed the board in a couple of weeks, and I did the wire wrap in a few days, and we plugged the board in and it worked.

The board came out in August of '82, the Hercules Monochrome Graphics Card. I finagled a deal with *PC* magazine, which was the only magazine servicing the IBM PC market. They paid me for some consulting with advertising space, which worked out great, because they gave me a lot of advertising, and that was the first marketing push for us.

The ads came out, and it was just phenomenal, the response we had. We started selling graphics cards direct to customers and dealers. Sales were fairly low — I guess we sold about 100–200 cards a month, which at the time was probably about $100,000 a year. Which was a lot by *Boulevards* standards, but small by the standards of the computer industry.

So we plugged away, learning some of the idiosyncrasies of the product and making some minor changes to improve it, like manuals and packaging and software.

Our big break came when we were able to convince Lotus to write a version of *1-2-3* specifically for the Hercules Graphics Card.

How does it differ from any other version?

It has a driver that's designed for the Hercules graphics mode, for our memory map and parameters. And when you configure *1-2-3*, you select the Hercules option, and the driver is automatically installed in the program. So it's a matter of writing the driver, which isn't a very difficult process, really just a couple days.

When the driver came out with the first revision of *1-2-3*, which was July of '83, the sales of the Hercules Graphics Card started to double. Within six months we went from selling 150 boards to selling about five or six thousand [per month].

Were you doing anything unusual to promote the product? Lots of people have good products and they're still starving in their garages.

Regis McKenna said that what a lot of people don't understand about selling computer products is that advertising and dealer promotions and sales forces are really meaningless if your product isn't truly useful. What that means from a practical point of view is that small companies like ours must link with products that join together. There's so many aspects of the computer industry that companies must function together. And one of those [areas of collaboration] is software support for a graphics device that we produce.

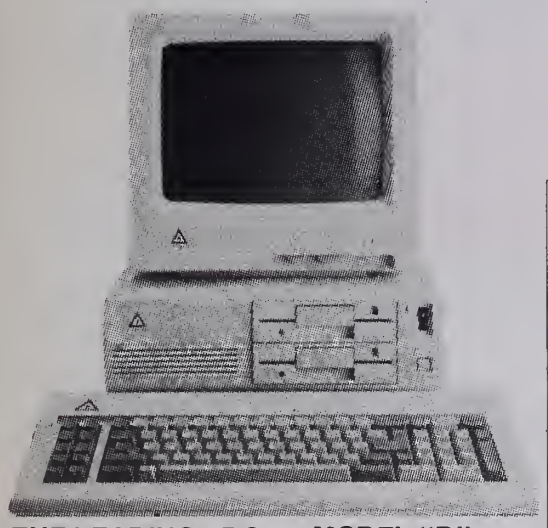
I dedicated most of my time and effort to getting software companies to write programs for the Hercules Graphics Card. That made the product much more useful to customers. That's really why they buy it.

Van designed a very clean, very reliable product at the right time, and we were able to make these key connections with the software vendors, and particularly Lotus, at the right time as well. Because of that, we are the only company that's been able to establish a graphics standard next to IBM's. The Hercules Graphics Card is a unique standard, the only one, other than IBM, that's had a significant amount of software support. According to some market surveys I've read recently, Hercules sells more graphics cards than anyone, including IBM. Between IBM and Hercules, we have between 80 and 90% of the graphics board market, and Hercules has a slightly larger share than IBM.

Do you attribute that to the high resolution?

It's the high resolution, but it's also the fact that the high resolution is useful. High resolution in itself is meaningless. You've got to have the software to utilize it, and that's what we were able to do. We had high resolution when maybe 100 people a month would buy the product. High resolution by itself is nothing, just as

WE SERVE ALL YOUR COMPUTER NEEDS



THE LEADING EDGE™ MODEL "D" PERSONAL COMPUTER

LEADING EDGE®

LEADING EDGE SYSTEM
256K 2-DD, MONO/COLOR GRAPHICS MONITOR,
SERIAL/PARALLEL PORTS
CLOCK CALENDAR, MS-DOS/GW-BASIC
BOOSTED TO 640K. **ADD $125**

$1395

COLOR SYSTEM **$1700**

	THE LEADING EDGE™ MODEL "D" PERSONAL COMPUTER	THE IBM® PERSONAL COMPUTER
Display	Hi-res monochrome display standard	Monochrome display—$275
Video Capabilities	High resolution, TTL monochrome output with Hercules™ graphics emulation. RGB Color graphics output.	Monochrome controller (text only)—$250
Memory	256K Standard	256K Standard
Speed	4.77 MHz	4.77 MHz
Expandability	Expandable to 640K on motherboard	Expandable to 640K. Must add two boards
Disk Drives	2—360KB Drives Standard	2—360KB Drives Standard
Battery Backed Clock/Calendar	Standard	Not available from IBM
Ports	Both Parallel and Serial Standard	Serial—$100
Expansion Slots	4 slots Standard of which all remain open after expansion to 640K	5 slots Standard, of which none remain open after expansion to 640K
Software	MS-DOS® and GW Basic Standard®	PC-DOS® and Basic—$65
Warranty	One Full Year parts and labor	90 Days parts and labor
Support	Lifetime no charge toll-free hotline Standard. Best in the industry.	None on hardware. Software optional at $40 per call
Service	Nationwide Service Centers	Nationwide Service Centers
Price	$1,495 Complete	$2,985 (Configured as basic Leading Edge PC Model "D" minus RGB output)

THE LEADING EDGE MODEL "D" FIXED DISK PERSONAL COLOR COMPUTER

Leading Edge Hardware Products, Inc.,
225 Turnpike Street, Canton, MA 02021
800-343-6833, (617) 828-8150

Leading Edge is a trademark of Leading Edge Products, Inc. IBM and PC-DOS are registered trademarks of International Business Machines Corporation. MS-DOS and GW Basic are registered trademarks of Microsoft Corporation. Hercules is a trademark of Hercules Computer Technology.

ITT SYSTEM.....**$1549**
256K 2-DD, MONOCHROME SYSTEM, ITT DOS 2.11/ BASIC

PRINTERS
EPSON LX-80 .....**NLQ...$249**
EPSON FX-85 .....**NLQ...$389**
EPSON FX-185 .....**NLQ...$559**
EPSON/COMRITER .....**LQ 20 CPS...$335**
OKIDATA 192.....**$385**
OKIDATA 193.....**$555**
STAR SD15 .....**$465**

HARDDISKS/INSTALLED
10 MB HD **$595**
20 MB HD **$695**

MODEMS (INCLUDES SOFTWARE)
HAYES 1200 INTERNAL/SMARTCOM **$359**
RACAL VADIC 1200.....**$285**

MONITORS
POLO HI RES RGB COLOR **$345**
PRINCETON HX-12.....**$445**
PRINCETON MAX-12E **$178**
SANSUNG TTL AMBER .....**$ 99**
SYNCO COMPOSITE .....**$ 85**

GRAPHICS CARDS
MONOGRAPHICS CARD **$169**
HEXACE COLOR/PARALLEL PORT.....**$139**
STB CHAUFFER.....**$295**

ACCELERATOR CARDS
ORCHID TURBO W/128K **$605**
MAKE YOUR PC/PC XT 2-4 TIMES FASTER

EXPANSION BOARDS
SIGMA MAXIMIZER MULTIFUNCTION.....**$165**
OK/SERIAL/CLOCK CALENDAR/SOFTWARE

FLOPPY DISCS
DS/DD MAXELL BOX OF 10.....**$ 20**

CHIPS
64K/256K PER SET OF 9.....**$8/$45**
8087 .....**$135**

UAS

1655 N. California
Walnut Creek, CA 94596
(415) 943-6848

MON-FRI 10-6
SAT 10-5

Universal Automated Solutions, Inc.

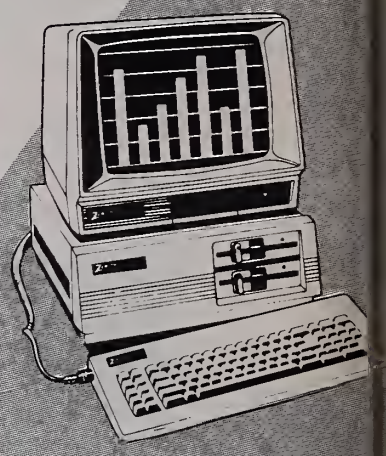
WE ARE THE #/!*% COMPETITION

Go Beyond
COMPATIBILITY . . .
Reach For
TOTAL PERFORMANCE!

ZENITH | data systems

CHOCOLATE XT $1995

256K, Hi-Res Amber Monitor, Graphics, 2 Drives,
10MB Hard Disk, Runs Lotus,
Symphony, Flight Simulator



The Quality Goes In Before the Name Goes On!
A Tradition of Product Reliability

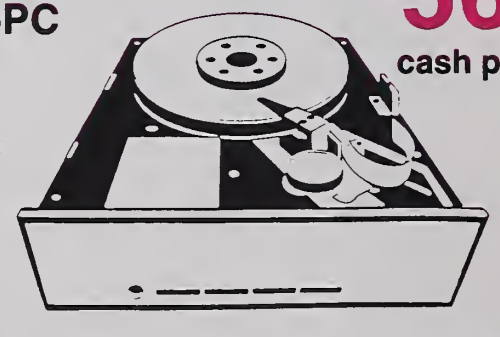
$2595
Portable or Desk Model

SANYO

UPGRADE YOUR IBM-PC

10 MB hard disk system

- lower power drain, same current as IBM floppy disk drive
- 1 year warranty
- includes controller board and cable



$565
cash price

The MBC 555-2 series

- 16 Bit 8088 CPU MS-DOS 2.11
- 128K RAM expandable to 640K
- 2 5-1/4″ IBM compatible drives
- Parallel printer port
- RGB color graphics board
- 80 column Zenith monitor
- Wordstar-word processing
- Calcstar-financial spreadsheet
- Easywriter 1-alternate word processor
- MailMerge & Spellstar
- InfoStar-Data Base Management

$1695

CORONA PC AND PORTABLE PC. Superb graphics and easy-on-the-eyes monitor. Plus all the memory you'll need to run even the most complex programs. All for a lot less than IBM. Fully IBM-compatible. 256K standard.

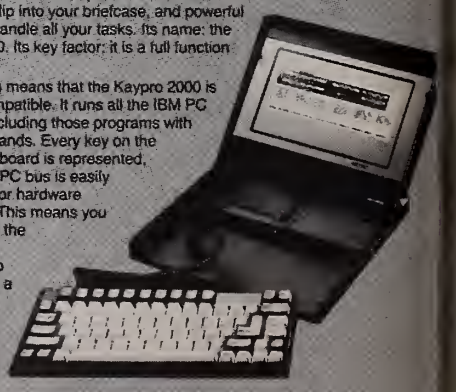
The Corona PCs. Come in and make a value judgment for yourself.

corona data systems, inc.

KAYPRO 200(

Now you can own a computer that's small enough to slip into your briefcase, and powerful enough to handle all your tasks. Its name: the Kaypro 2000. Its key factor: it is a full function machine.

Full function means that the Kaypro 2000 is IBM PC compatible. It runs all the IBM PC software, including those programs with color commands. Every key on the IBM PC keyboard is represented, and its IBM PC bus is easily accessible for hardware expansion. This means you can have all the power of an IBM desktop computer at a fraction of the size (and a fraction of the price).



HIGH-TEK COMPUTERS

1435 Duncan St., Walnut Creek

CANON PW1080
PANASONIC 1091
BROTHER HR 15XL

CALL FOR PRINTER PRICES

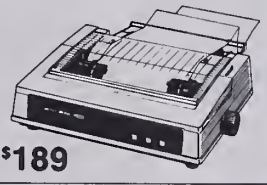
EPSON DX10
TOSHIBA 351
SILVER REED 5500

640K **RAM** 10 MB **HARD** Disk
Full COLOR & Mono
GRAPHICS 165 Watt **ZENITH**
POWER Supply **SUPERIOR**
Keyboard • Printer Port
MS-DOS 2.11 - "The Word"
Processor w/Merge Printing
Spell Checker - MultiPlan
Financial Spreadsheet
Includes Micro Soft Software

ZENITH
AT's & LAP TOP
ARE IN

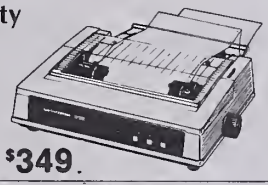
SMITH-CORONA®
Quality Dot Matrix Printers

D-100 Data Quality
- 120 CPS, Bi-Directional
- 1 line buffer std.
- Parallel Interface
- Friction feed/Tractor Std.
- 11" Paper • Graphics



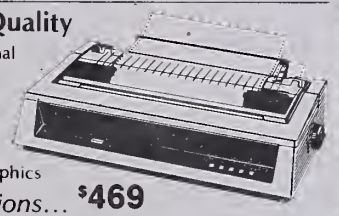
$189

D-200 Near Letter Quality
- 120 CPS, Bi-directional
- 2K Buffer std.
- Dual Interface std.
- Friction Feed/Tractor std.
- 4" to 11" paper
- High Resolution Graphics



$349.

D-300 Near Letter Quality
- 140 CPS, Bi-directional
- 2K Buffer std.
- Dual Interface std.
- Friction Feed/ Tractor std.
- 4" to 15" Paper
- High Resolution Graphics



$469

While others sell Options...
at **SMITH-CORONA** *its all Standard Equipment*

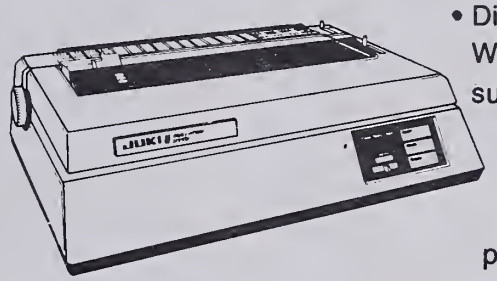
XIDEX-DYSAN

10 with Plastic Case

Double Sided/ Double Density

$12.95

JUKI® Model 6300
bi-directional



- 40 cps
- Diablo Print Wheels and supplies

Excellent for word processing

We Are An Authorized Juki Service Center

$995

**Runs Lotus 123, GW Basic, Flight Simulator, IBM Color Graphics, 80-90% IBM compatible, **with optional IBM graphic board $200.00

- Sanyo advanced color graphics basic
- Utilities-Lessons-Startup

Monitor Optional

OLYMPIA COMPACT 2

$369

BUILT-IN INTERFACE

Lap-Top

•**COMPATIBILITY:** Fully compatible with IBM PC in all key areas:
Software: Runs all popular programs for IBM PC.
Hardware: Accepts standard IBM expansion cards (with Base)
Media: Can read and write standard IBM 5.25" diskettes, with external drive. Also accepts DG/1 media.
Display: Behaves like IBM color card with monochrome monitor. (Most popular configuration)
Keyboard: Every key on the IBM PC keyboard is represented.
•**SIZE/WEIGHT:** 11.5" (D) x 13.1" (W) x 2.6" (H) 11.5 lbs.
•**CARRYING CASE:** Padded nylon carrying case with detachable shoulder strap and briefcase handle flap.

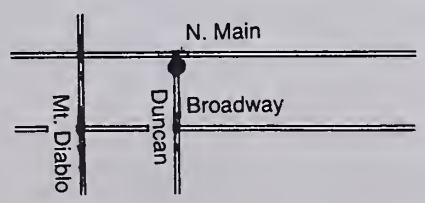
Call For BEST Price
only 11½ LBS.

Double Sided/
Double Density
25 Disks BULK
$24.95

SANYO CPM SYSTEM with LETTER QUALITY PRINTER

includes Wordstar, Mailmerge, Spellstar, Calcstar & Infostar

$999 includes box of paper & box of Disks



415/930-9600

"Resellers typically sell the products of many manufacturers, and if we design and market our product well, we can get the same resellers that are selling IBM equipment to sell *our* equipment. If we give them a reason to sell it, they *will* sell it."

512K of memory is nothing — it only facilitates the software. That's really the key thing. We made *1-2-3* a better program, in my opinion, and that's why the card is so popular among *1-2-3* users.

So when did you decide to make a color card?

That began when the gate-array technology had been developed far enough to allow us to achieve the reduction of cost and reduction in board size to allow us to make a product. We were not interested in making a straight copy of an IBM PC color card, and we felt we couldn't get the pricing, in components, to allow us to make the margins we'd want to.

When the gate array technology had advanced to the point where it was working reliably and could solve our problems, we designed the color card using two gate arrays, two custom ICs. Because we could fit so much circuitry, customized for our application, into the gate array, we were able to reduce the other components.

One of the fascinating things about the market we're in is that the PC's, when they became cheap enough, moved out of the national accounts division, which is what IBM used to sell all of its mainframes, and into retail stores and VARs. In other words, it went into a third-party reseller channel, rather than a direct-from-the-manufacturer channel. Resellers typically sell the products of many manufacturers, and if we design and market our product well, we can get the same resellers that are selling IBM equipment to sell our equipment. If we give them a reason to sell it, they *will* sell it. The myth was promulgated in the early days of the IBM PC that nobody could really sell against IBM. Hercules is living proof that you can sell against IBM, at least on the graphics board level.

The threat we always face is that IBM could decide, because they control the design of the CPU, to phase graphics products out altogether, and put the graphic circuitry on the motherboard, which would make it very difficult for Hercules, or any other board manufacturer, to compete.

The idea has surely occurred to IBM already . . .

IBM has faced antitrust litigation over the issue of bundling. Bundling software was the big issue. They would bundle software with their mainframes — in other words, if you want to buy the mainframe, you've got to buy the software. That was determined to be illegal.

Whether or not it ever becomes an antitrust issue, if IBM ever begins to bundle multifunction cards or modems or graphics boards, and Hayes or AST or Hercules decides to sue IBM for bundling — that's unknown. [Laughs] I hope it never happens, but it's possible that it co*uld* happen. It would be unfortunate for the consumer, who now has the opportunity to choose the best product for his or her application. That's the beauty of the Apple II and the IBM PC, and the major shortcoming of the Macintosh. It's probably the key reason that the Macintosh has not been accepted in business. It's not expandable, and because it isn't, I think many business people feel that they'll be locked into the limitation of the Macintosh hardware performance forever.

If you look back to the IBM PC, which is almost four years old now — when it first came out, it was very limited. It came with 64K and no hard disk, no color monitor, no letter quality printer — there were some extraordinary shortcomings. The third-party manufacturers, some of whom were created around products for the IBM PC, solved those user needs quickly, much faster than IBM did. IBM didn't come out with a color monitor for about a year and a half after the PC came out. Amdek was out with a color monitor within about six months. Tecmar came out with a memory board; because the PC could address 640K, they came out with a memory board, and AST and Quadram eventually dominated that market. If it weren't for Hayes there would be no modems for the IBM, because IBM has never sold a modem.

Are your cards usable in the PC compatibles?

They can be used in most of the compatibles these days. There was a time in the first round of PC-compatible machines when everybody was trying to improve on the IBM PC, and when they improved on it they found that they were introducing software incompatibilities into the system. The successful compatibles have been the ones that attempted to be *most* compatible with the IBM PC, both as far as hardware and software were concerned.

Do you see Hercules addressing product lines other than IBM — Apple, for instance?

We would have explored the possibility of making peripherals for the Macintosh had it been an open system, unquestionably. We might, for example, have produced a color graphics card.

We're not terribly prolific with our products. We're very cautious — we have two products after being in business for three years, and we'll do $60 million in sales this year. Our style is not to flood the market with lookalike products, our style is to build the best product that we can, to support and market it the best we can, and not make too many mistakes. Some companies have a shotgun approach — they load up with buckshot and blast away at the market and hope something hits.

It takes a tremendous effort — sales and marketing efforts, and writing software and that sort of thing — to make the product useful. It's not like selling a memory board where you put it out there and it just runs. It takes effort. But ultimately that effort is rewarded, because that product becomes established in its own right and there's not a lot of me-too products that can compete with it.

Do you expect to be making products for the Amiga and the Atari ST?

No. I doubt it very seriously. I think that the capabilities that those machines offer are unimportant to the business user. And I think that the success of the IBM PC is based on one key thing — whether IBM stumbled across this or whether they know it, and I think they know it — they sell a machine, not a sexy box. They sell a machine to solve business users' problems and work in a business environment. Apple doesn't do that, and I think that's their failing. They sell Yuppie philosophy of how you can maximize your personal identity, or some such nonsense.

My feeling about the Amiga and the Atari computer, from what I've read, is that they're offering capabilities that mean nothing to the business user. I don't pay people to sit around and draw pictures on computers, and I can't imagine any business executive or manager using a *MacPaint* [type of program] in an office environment to do anything of a business nature. Atari and Amiga are offering high performance color graphics, which have no utility in an office, and offering sound capabilities that probably have even less utility in an office.

So you've got two winning products. What are you going to do for an encore?

We have two graphics-related products coming out in the fall that will not impact the two products we have now. We feel that they're excellent designs and we'll put our resources behind those products. We're confident that there will be a very strong market for graphics products for the IBM PC and AT for the next two or three years.

There's no guarantee that any future machine from IBM will be successful. If people have any doubts about that, I'd point to the portable and the PCjr as examples of how IBM can miss the target. A PC II, whatever that might be, or whatever that might be called, may miss the target too. So before we get all bent out of shape from reading rumors in *PC Week* or publications like that, I'd rather follow our course and wait and see what IBM is doing before we get hysterical and make some dumb move.

Do you want to talk about the new products?

I *am* talking about one of them, which is a higher-performance, slightly higher-cost color graphics card that's slated to go against the EGA [Enhanced Graphics Adapter, from IBM]. Not to be an EGA clone, but to be a unique card with some unique features. That product will come out at the end of this year or the beginning of '86.

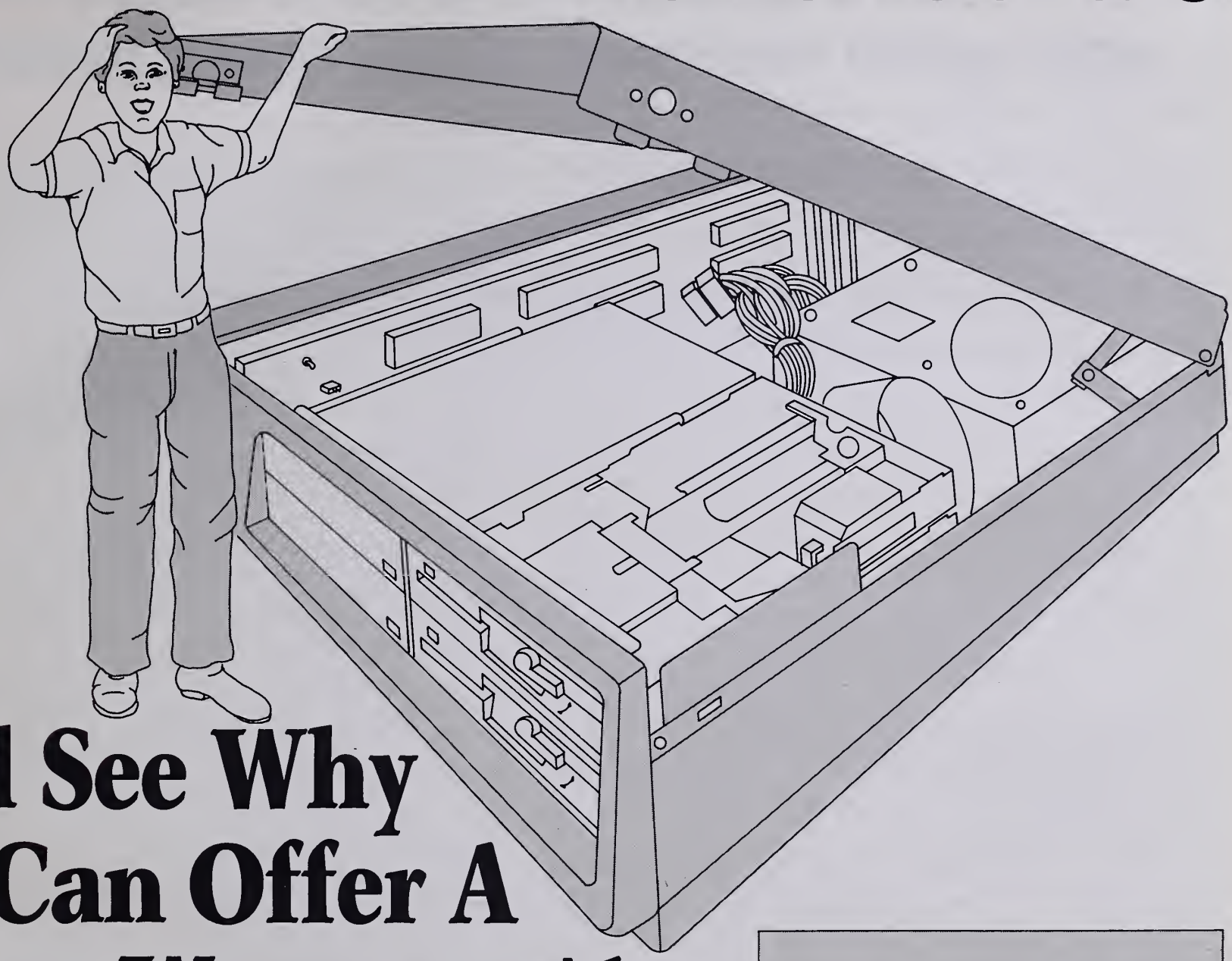
I think the EGA, which was IBM's answer to the criticism about its video technology, has been a real dud. It does not run any software either written for Hercules or the IBM color card. And the software vendors have been slow to support it. It's a rather expensive and clumsy and complicated product, despite the fact that it has the IBM logo on it. I think it's a poorly conceived product.

Do you feel particularly at risk from IBM's whims?

Absolutely. But that's been true from Day One, and I don't lose any sleep over it. I think Hercules' mandate should be: design the best graphics products that we can, given the market that we're after, which is the mass consumer market. We're not interested in specialized niches, or we would have been in them by now. We sell mass products and high volume, and we ship over 25,000 graphics boards per month.

Our mandate is to make the best products that we can, knowing what we know, and if IBM belches in Hercules' direction, we'll stand up to it. [Laughs] As best we can. □

Look Under The Hood Of Our PC



And See Why We Can Offer A 1 Year Warranty*!

OEM/VAR Programs Available CALL for Details

KARON PC
Includes: keyboard, 130 W power supply, 2 ½Ht. Drives, 6 pack multifunction board, color graphic card, floppy drive controller card **$1295**

KARON XT
Includes: keyboard, 130 W power supply, 2 ½Ht. drives, 6 pack multifunction card, color graphic card, floppy drive controller, 10 MB hard disk, DTC hard disk controller **$1895**

If you are in the market for an IBM PC or any other personal computer, Karon Technologies has systems manufactured here in Santa Clara that will out perform any competitor in every way.

- **KARON systems** run all the popular Application Programs, Software and expansion products for the IBM
- **KARON systems** offers greater Access with room to grow
- **KARON systems** cost 20-30% less than competitive systems
- **KARON systems** are manufactured and serviced here in Santa Clara.

KARON TECHNOLOGIES

(408) 246-6823 4010 Moorpark Av. Suite 207, San Jose Ca. 95117
*all parts & labor provided at manufacturers location

INTECH PREVIEW

REAL WORLD SOLUTIONS TO REAL WORLD PROBLEMS

By J.S. Taub

Whatever business you're in, chances are that some aspect of the computer industry could help you run it better and more efficiently. However, it's also rather likely that you're confronted with a bewildering array of products and salesmen, all promising miraculous solutions to all your difficulties. Common sense tells you they can't *all* be right, but how are you going to make an informed decision, preferably without bringing your company to a standstill while you're out exploring options?

A good place to start is INTECH (the Integrated Information Technology Conference and Exposition), being held this year in San Francisco's Moscone Center from August 26 to 29. Not just another trade show, INTECH offers product exhibits but also stresses in-depth conferences to explore issues and solve problems. This year's focus is "Information: How to use it, move it, protect it, manage it." The conferences are two-day affairs, held on either Monday and Tuesday or Wednesday and Thursday. Conferences will feature speakers drawn not only from the ranks of computer equipment vendors but, perhaps more importantly, from the ranks of business users, from large and small firms, who will offer case histories and suggestions of what worked in their individual situations.

On Monday and Tuesday, attendees will have a choice of two conferences. "Integrating Personal Computers" will cover the process of selecting and placing PCs in the office, linking PCs with existing systems, planning for software site licensing, and networking PCs. Another conference will cover networks specifically: how to plan for LANs, select and use management tools and techniques, and determine the cost-effectiveness of migration to standards vs. buying a single vendor's equipment.

Wednesday and Thursday's conferences will center on information security and managing technology. In the information security conference, sessions will cover how to recognize threats to your firm's information system, evaluate how effectively your current security procedures are protecting your information, help you decide how to reduce the risk of information loss or damage, and suggest the most cost-effective ways to protect your information and equipment. Another conference will stress managing the current technology: how to plan for new information systems, anticipate the "ideal workstation," and study the relative merit of IBM and AT&T systems in the communications market. Yet another conference will deal with integrated voice and data systems—how to plan for such systems, what the current technology is capable of and how to prepare for new product offerings.

In addition to the conferences, INTECH includes an exposition with many vendor displays, all stressing practical solutions to business problems. A particular highlight of the Expo is the Applications Center, a special exhibit spotlighting real world solutions to real world problems. A range of topics from micro-to-mainframe linking to integrated voice and data systems will be addressed, along with vertical market applications for a variety of industries from banking to manufacturing. The Applications Center is intended to deal with the practical concerns of end-users and to provide a forum for networking between users and vendors. The Center will be showcasing products and specialized solutions continuously from 12 noon to 5 pm on the 27th, 10 am to 5 pm on the 28th, and 10 am to 4 pm on the 29th.

What follows is a preview of some of the exhibitors at INTECH, the problems they encountered and the solutions they found. Perhaps some of them are relevant to your situation.

For more information about INTECH, call (800) 638-8510. — *Mary Eisenhart*

Computer Assisted Retrieval: Find Your Records Fast

For every company that still dispatches the clerk to some basement file room for a piece of paper, there is probably someone in the executive suite thinking there must be a better way.

A high tech answer to the record management industry's woes now includes Woodburn & Associates' C.A.R./3000 computer-assisted retrieval software. It works in conjunction with the Hewlett-Packard 3000 family.

Computer Assisted Retrieval (C.A.R.) combines computer and micrographic technologies and is especially useful for companies that store their records on film. C.A.R. provides electronic filing of micro-image document location. The computer provides indexes and quick access of the microimage and its location so that documents can be viewed

Computer Assisted Retrieval combines computer and micrographic technologies to provide electronic filing of micro-image document location.

FREE DELIVERY • TOLL FREE ORDER LINE • SHIPPING DAILY

VIPC XT COMPUTER SYSTEM

Based on Super XT Type Motherboard features
256 Ram MBoard, 8 IO Slots, 8088 CPU, optional 8087
135W power supply, TEAC 55B DS/DD 360K Drive, Disk Controller Card
Color Card with RGB and composite Video, IBM style Case and Detachable IBM type Keyboard, Completely Assembled and Tested.

SPECIAL PROMOTIONAL PRICE

Only $699 (this is not a mistake Yes ONLY $699)

** Build Your Own XT type Computer **

Super XT-Type Motherboard, all IC's socketed and tested w/ warranty priced with O K **$179**
64K Ram increments **$9.99**
IBM Style Case w/ all Mounting Hardware fits XT Board **$99**
Keyboard w/ KB 5150 Standard Layout **$59**
Deluxe Keyboard w/ cursor pad and 4 LED Displays. **$99**
Floppy Disk Controller Card w/ Cables **$59**
Color Card, Dual RGB & Composite output **$99**

HARD DISK DRIVES AND FLOPPY DRIVES

Microscience 10MB formatted w/ Western Digital Card **$479**
Microscience 20MB formatted w/ Western Digital Card **$669**
Western Digital X2 Controller Card w/ Cables **$129**
DTC 5150 DX w/ Cables **$149**
Panasonic JA 551 same as Shugart SA455. . . . . **$85**
TEAC 53B originally made for Sanyo **$85**
TEAC 55B industry standard 360K DS/DD **$89**
TEAC 55F 720K DS/QUAD DEN. **$109**
TEAC 55F6V New IBM "AT" 102 MB type Drive for IBM ATT **$119**
KF High Res 13" Color/Amber Green All in One Monitor. **$419**
KF 12" Amber Flat Screen w/ Swivel TTL Input **$139**

APPLE ACCESSORIES

APPLE DISK II TYPE DRIVE MITAC AD-1 SHUGART SA-390 MECHANISM (SAME AS APPLE) 100% COMPATIBLE FOR ALL APPLE II, II+, & IIE COMPLETE WITH MATCHING CASE & CABLE, READY TO PLUG IN, SPECIAL ONLY **$125.00**

NEW MITAC AD-3C DISK DRIVE FOR APPLE IIC EXTERNAL DRIVE JUST FOR APPLE IIC, NO CARDS NEEDED! ATTRACTIVE DESIGN, COLOR COORDINATED WITH IIC CASE. PRECISION DIRECT DRIVE, DIRECT CONNECT 19 PIN CABLE JUST PLUGS IN: 100% HARDWARE & SOFTWARE COMPATIBLE WITH APPLE IIC: FULL 1 YEAR WARRANTY, SPECIAL ONLY **$139.00**

DISK CONTROLLER CARD FOR 1 OR 2 DRIVES II+, IIE. **$35.00**
16K RAM LANGUAGE CARD UPGRADE, 48K II & II+ TO 64K RAM. **$35.00**
PRINTER CARD WITH CENTRONICS PARALLEL CABLE II+, IIE **$35.00**
GRAPPLER PLUS TYPE GRAPHICS PRINTER CARD W/CABLE II+, IIE **$59.00**

#1 BEST SELLER, THOUSANDS SOLD, FULL ONE YEAR WARRANTY Z-80 CPM MICROSOFT SOFTCARD EMULATOR, RUN WORDSTAR, MAILMERGE, D-BASE AND OTHER Z-80 CPM BASED SOFTWARE, SPECIAL ONLY **$39.00**

80 COLUMN CARD WITH INVERSE VIDEO CHIP VIDEX TYPE II+ **$49.00**
EXTENDED 80 COLUMN WITH 64K RAM FOR APPLE IIE, ONLY. **$59.00**
RS-232 SERIAL CARD 0-19, 200 BAUD RATE WITH DB-25 CABLE. **$39.00**
ZOOM NETWORKER 300 BAUD MODEM W/SOFTWARE, PLUG IN CARD **$79.00**
NOVATION APPLE CAT 1200 BAUD MODEM W/SMARTCOM SOFTWARE **$389.00**
SUPER SERIAL RS-232 COMMUNICATION CARD WITH DB-25 CABLE **$89.00**
EPROM BLASTER FOR 2716, 2732, 2764 & 27128 TYPE CHIPS **$69.00**
POWER SUPPLY HEAVY DUTY 5 AMP APPLE REPLACEMENT UNIT. **$55.00**
COOLING FAN WITH SURGE PROTECTION U.L. LISTED COMPONENTS. **$24.99**
JOYSTICK MACH III W/FIRE BUTTON, SPECIFY APPLE II, IIE, IIC. **$35.00**
KOALA PAD WITH MICRO PAINTER SOFTWARE FOR APPLE IIE & IIC. **$69.00**
JOYSTICK IIE, IIC (9 PIN) TO II, II+ (16 PIN) CONVERT CABLE **$9.00**

APPLE COOLING FAN

SURGE PROTECTED COOLING FAN, QUIET, EFFICIENT, JUST CLIPS ON SIDE OF APPLE II, II+ & IIE COMPUTER, U.L. LISTED COMPONENTS. LIGHTED FRONT POWER SWITCH, DUAL AUXILIARY OUTLETS, POWER CORD. **$24.99**

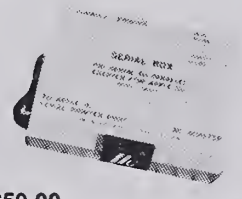
A.C. POWER STRIP

SIX OUTLETS WITH SURGE PROTECTION, CONSIST OF (M.O.V.) METAL OXIDE VARISTOR AND SPIKE DETECTORS, U.L. LISTED COMPONENTS, SIX FOOT GROUNDED CORD, OPTIONAL WALL OR FREE STANDING MOUNT, LIGHTED POWER SWITCH INDICATOR. USE FOR ANY ELECTRICAL APPLICATION.
(A) 15 AMP CIRCUIT BREAKER, 1800 WATT POWER HANDLING **14.99**
(B) 10 AMP REPLACEABLE FUSE, 1250 WATT POWER HANDLING **$11.99**

VERBATIM DATALIFE SALE

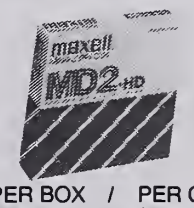
AS LOW AS $1.40 EACH SS/DD
$1.65 EACH DS/DD

NEW APPLE IIC SERIAL TO PARALLEL BOX



RUN YOUR EPSON/GEMINI CENTRONICS PARALLEL TYPE INPUT PRINTER FROM YOUR APPLE IIC SERIAL PORT. ADAPTER INCLUDES ALL NECESSARY CABLES AND HARDWARE, COMPLETE WITH WARRANTY & INSTRUCTIONS. **$59.00**

LIFETIME WARRANTY DISKETTES & STORAGE CASES



BOX OF (10)/CASES OF (10) BOXES	PER BOX	/ PER CASE
MAXELL MD-1 SS/DD 5¼"	$15.49	$145.00
MAXELL MD-2 DS/DD 5¼"	$19.99	$185.00
MAXELL MD-2HD 96 TPI (IBM AT 1.2-1.8 MEG.)	$45.00	$390.00
MAXELL MF-1 3½" (MACINTOSH DISK)	**$26.00**	**$250.00**
VERBATIM DATALIFE SS/DD 12-PACK	$17.99	$169.00
VERBATIM DATALIFE DS/DD 12-PACK	$21.99	$199.00

OUR OWN V.I.P.C. QUALITY DISKETTE. 1,000,000'S SOLD!
5¼" SS/DD DISKETTE WITH HUBRING, ENVELOPE, WRITE PROTECTION TABS ALL INCLUDED, SOLD IN PACKS OF (25). ALL OF OUR DISKETTES ARE 100% CERTIFIED & GUARANTEED FOR LIFE. **ONLY 88¢ EACH.** 5¼" DS/DD DISKETTES, 100% CERTIFIED BOTH SIDES. **ONLY 99¢ EACH**

NATIONAL TOLL FREE LINE
(ORDERS ONLY)

CA ORDER LINE CALL
800-232-9090

UPS SHIPPING DAILY

EASTBAY ORDERLINE
(415) 881-1772

WESTBAY ORDERLINE
(415) 341-2425

ORDER INFORMATION:
WE SHIP ANYWHERE IN CONTINENTAL USE DAILY VIA UPS
CALIFORNIA RESIDENTS INCLUDE 6.5% SALES TAX
C.O.D. ORDERS ADD $2.00
FREE SHIPPING ON ORDERS OVER $100.00 (UPS GROUND SERVICE ONLY)
ORDERS UNDER $100.00 ADD $2.00 SHIPPING/HANDLING CHARGES
WILL CALL SERVICE AVAILABLE AT OUR HAYWARD OFFICE BY APPOINTMENT ONLY

ALL MERCHANDISE IS 100% FACTORY WARRANTEED.
PRICES AND AVAILABILITY SUBJECT TO CHANGE WITHOUT FURTHER NOTICE.
PAYMENTS ACCEPTED IN CASH, CHECK, MONEY ORDER OR C.O.D.
C.O.D. ORDERS OUTSIDE CA. ON CASH/CASHIERS CHECK BASIS ONLY
PURCHASE ORDERS ARE GLADLY ACCEPTED AND EXPEDITED.

V.I.P.C. "THE PRICE CONNECTION"

384 Jackson Street Suite 1
Hayward, Co 94544

nearly instantaneously.

"This is not full text, but key word filing," says Patrick Woodburn, president of the Glendale firm. "For example, you can find a document based on the invoice number or the sales order number. The source document is already filmed and the codes keyed in at the outset."

The C.A.R./3000 also allows the user to create and maintain index catalogs to reference micrographic libraries. With the catalog there is also a memo file to record notes relating to any document or frame. Additionally, individual user departments have the freedom to define how the software should be used to suit their needs. The cross reference function is also helpful when trying to locate information.

The user may request a download of information, which will then transmit the data to an intelligent micrographic reader-printer. A carousel containing the film roll sits near the operator's desk.

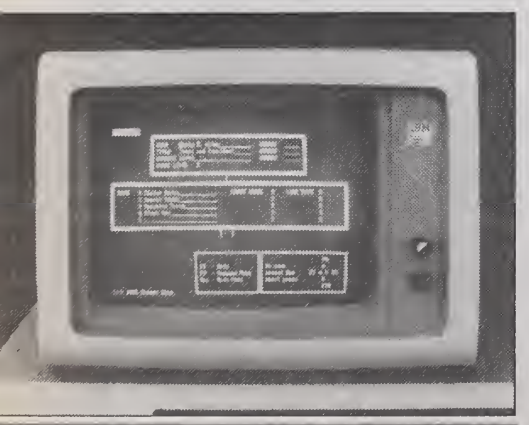
The C.A.R. system eliminates the massive space requirements for document libraries and the clerical support staff needed to maintain them. "The staff can be more effectively employed by using this system which is easier, faster and cheaper, while enhancing customer service," says Woodburn.

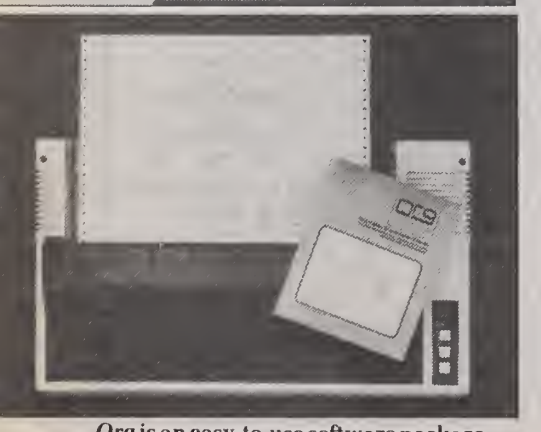
The main beneficiaries of this software to date have been banks and the financial industry in general. But it may also be applied to the medical service industry, insurance, education, transportation, government and legal industries. "It is especially useful for accounts payable, and that is its most popular use right now. Everyone wants to know where their money is," Woodburn says. However, banks also use it for checks and credit slips that they have to produce for their customers. "Even TV networks use it to track down editorial copy for their broadcasts," Woodburn adds. Accounts receivable and interdepartmental uses within companies are also beginning to view C.A.R. as a panacea to the filing blues. (Woodburn & Associates, 535 N. Brand Blvd., Suite 1003, Glendale, CA 91203, (818) 956-7075.)

Org: Keeping Organizational Charts Current — Easily

Though "Banner Blue" may be recognized by inhabitants of the Midwest as a premier train on the old Wabash Railroad, within the environs of the Silicon Valley the name assumes another meaning.

Kenneth Hess, president of the one-year-old Fremont firm bearing that name, puts it this way, "There are too many companies out there with names that begin with Z and end with X. People should be more creative about their names as well as their products."





***Org* is an easy-to-use software package that enables businesses to create and maintain organizational charts.**

Org, software that Hess began developing in April, 1984 and finished this June, is short for organization chart, and is used to assist companies in creating such charts for internal operations as well as presentation purposes.

"Doing a chart for a company with 25 employees can take one person an entire afternoon. With the *Org* software, it takes a few minutes. You don't have to go through the cut and paste, the program does all the hard work of preparing the charts," Hess says. According to his research, 45% of companies with under 250 employees use such charts. That number rockets to 75% for companies with over 250 employees.

Org can draw lines connecting an employee to a manager; it determines spacing, placement and size of boxes so that the operator doesn't need to hand rule the chart. The software incorporates a complete set of editing capabilities so that names can be added, deleted or moved, and that whole departments and divisions can be shifted, reorganized or relocated. *Org* can handle up to 250 positions using a format of up to 11" by 14". This allows the company to hang on to its chart even after things change, it eliminates out-of-date charts, and it can be revised by any manager or secretary with a few keystrokes. "Small companies with as few as 10 to 12 employees are constantly changing. You find managers sketching charts on the backs of envelopes or on napkins and losing them. This works on an IBM PC or any compatible, which makes it accessible to most companies," Hess says.

Organization charts are crucial time-savers for company managers in communicating with prospective employees and independent vendors. For management, it aids in determining corporate hierarchy and work assignments. Potential employees can plot a career path during an interview. Charts also allow vendors to pinpoint the person to contact on a call, while larger companies use them for presentation purposes.

"There are a lot of computer drawing programs, but you have to tell them everything about what to do," Hess points out. "I observed people using existing programs, I used them myself, and I knew that they were poorly suited for the task." Instead, Hess wrote out a long list of products and picked one that would be of most value to the end user. "I was looking for a product with a unique function, that not too many people were looking for a piece of," he explains. "Like our name," says Hess, who works with three associates, "I wanted to be unique without being flaky." (Banner Blue, P.O. Box 7865, Fremont, CA 94537, (415) 794-6850.)

Mini Data Systems' Powertext publishing system software allows even small companies to produce typeset-quality reports and documents on microcomputers.

PC-Based Publishing: No More Ugly Reports

Sometimes cracking dependency on the classic typewriter, which can hammer out the copy only in conjunction with deafening the ears or slaughtering the fingertips, is tantamount to what the cliche writers say about old dogs.

But Hugh Sponsel, president of the composition systems division of Mini Data Systems, is nonetheless marketing the El Segundo firm's power text publishing system software. It's aimed at speeding up and professionalizing the editorial production values of corporate America.

"It's hard to break the typewriter habit, but we are attempting to show small companies that they too can get polished, publication-quality reports at high speed and relatively low cost," Sponsel says.

The software, which took eight years to streamline, is a tripartite formula combining a graphics module, a word processor and a publishing composition system. It is anchored by what Sponsel labels "implicit analysis," meaning that "the system looks at what it sees, and since it has already been told to expect it, it automatically types it according to specifications." Thus copy can be programmed to type according to rigid type specs without the operator spending time on elaborate coding or copy mark-up during the input phase. "The system knows that when it sees a certain formation of text, it will type it with the proper font, boldface, italics, type size or whatever," Sponsel says.

The software uses the *MultiMate* word processing system on an IBM PC or compatible. It is also being adapted to use *WordStar* and *SpellStar*. As the text is entered into the system it is automatically transferred to the publishing software. It typesets

WALL TO WALL FUN FOR ALL

A STORE IS BORN

GRAND OPENING CELEBRATION!

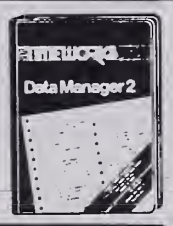
NEW STORES IN
- ★ STUDIO CITY
- ★ SAN BERNARDINO
- ★ PALM DESERT
- ★ GRANADA HILLS

40%-70% OFF MFRS. LIST COMPUTER SOFTWARE

NEW STORES IN
- ★ REDWOOD CITY
- ★ PALM SPRINGS
- ★ BAKERSFIELD
- ★ LOMITA

maxell.
12-MD2 5¼" DOUBLE-SIDED DOUBLE DENSITY DISKETTES
$1.66
WHEN YOU BUY THE 12-PACK AT 19.99

TIMEWORKS
BUY 1 GET 1 FREE!
$79.87 MFRS. SUG. LIST 259.90
SAVE 70%



MEMOREX
10-1S/2D 5¼" SINGLE-SIDED DOUBLE DENSITY DISKETTES
$1.00 PER DISK IN 10-PACK
PRICE AT REGISTER 12.99
LESS MFR'S. REBATE ..... – 3.00
YOUR FINAL COST **9.99**

JAMES F. FIX
THE RUNNING PROGRAM™
Features the principles of running and allows you to evaluate your current fitness level.
FOR IBM
$47.97 MFRS. SUG. LIST 79.95
meca

PRINT MASTER
$35.97 MFRS. SUG. LIST 59.95
ART GALLERY I
$23.97 MFRS. SUG. LIST 39.95
Unison World Inc.

4 in 1 SAMPLER
Abbreviated versions of Zorri, Infidel, Witness and Planetfall.
$4.97 MFRS. SUG. LIST 7.95
INFOCOM
TRY IT! YOU'LL LIKE IT! OR YOUR MONEY BACK.
WITH RECIEPT

SUPER HUEY
Exciting helicopter simulation game teaches you the techniques of flying on rescue, exploration and combat missions.
COMMODORE 64
$9.95 MFRS. SUG. LIST 19.95
COSMI

KENNEDY APPROACH
You are the Air Traffic Controller in this challenging real-life simulator game.
COMMODORE 64
$19.97 MFRS. SUG. LIST 39.95
MicroProse Software

Discover yourself at the center of a world jam-packed with surprising twists, unique characters and original, logical, often hilanous puzzles.
The Hitchhiker's Guide to the Galaxy
COMMODORE 64
$20.97 MFRS. SUG. LIST 34.97
APPLE, IBM...23.97 LIST 39.95
INFOCOM

SARGON III
World's finest microcomputer chess program. Internationally recognized as the ultimate chess software for players of all skills and interests.
COMMODORE 64, APPLE, IBM
$29.97 MFRS. SUG. LIST 49.95
HAYDEN

MILLIONAIRE
THE STOCK MARKET SIMULATION
Experience the real world of high finance while learning basic stock market terms, skills, strategies and concepts. Based on actual stock market trends and historical events, not just random numbers.
COMMODORE 64
$17.97 MFRS. SUG. LIST 29.95
APPLE .23.97 LIST 39.95
IBM .....29.97 LIST 49.95
BLUE CHIP SOFTWARE

POLE POSITION
Capture the pole position, turbo charge your way past the competition, and be the first to reach the checkered flag.
COMMODORE 64, ATARI
$19.97 MFRS. SUG. LIST 29.95
by Datasoft

SUMMER GAMES
COMMODORE 64, APPLE
$21.97 MFRS. SUG. LIST 39.95
FAST LOAD
COMMODORE 64
$21.97 MFRS. SUG. LIST 39.95
EPYX

Mind Prober
Analyze anyone in your life with Mind Prober. A personality software that lets you see people as they really are.
COMMODORE 64
$17.97 MFRS. SUG. LIST 29.95
APPLE, IBM...29.97 LIST 49.95

Hungry little monsters want to make Mr. Do, the lovable clown, their main meal. Mr. Do moves through 99 different screens to strategically combat the monsters with giant falling fruit.
Mr. Do!
COMMODORE 64, APPLE
$21.97 MFRS. SUG. LIST 39.95
by Datasoft

Limited to stock on hand. Ad items subject to prior sale.

THE WHEREHOUSE

CONVENIENT LOCATIONS EVERYWHERE

according to preset rules, changes fonts, rules tables, has a 100,000-word hyphenation dictionary and conforms to the Chicago Rules of Style for spacing, hyphenation and justification.

It is also capable of producing multiple columns of justified text, adhering to preset layout rules and cutting out space for graphics. It automatically balances the copy to the pictures, sets floating footnotes and running dictionary heads. If a table breaks page boundaries, it will reset the table and add on any running heads or continued lines. On the graphics side, it uses the CAD system, Autocad and GEMdraw for illustrations. In addition, it comes with its own co-processor printed circuit board. "It takes a lot of horsepower to do all of this, and having the extra board is like having two computers in one," Sponsel says.

The software can be used with several brands of laser printers and typesetters, including the Hewlett-Packard Laser Jet, the Xerox family and the Autologic family of typesetters.

"I've been in the publishing business since 1970, so I know that prior to this software you could only get the type of quality this offers if you had a mainframe. I wanted to produce a less expensive machine. Now the smaller companies can afford to have typeset quality where they would have to pay a zillion dollars before," Sponsel says. (Mini Data Systems, 2041 Rosecrans Ave., #359, El Segundo, CA 90245.)

Keyword 7000 allows information created on incompatible word processors to be exchanged and translated in fully revisable text form.

Incompatible WP Systems? Try Keyword

Gone are the days when the worst communication problem around the office was when the bosses weren't on speaking terms. Now it's equally serious when the computer equipment can't reach a common ground. Keyword Office Technologies, Inc., is forging a solution to the latter, whereas nothing seems to eliminate the former.

Keyword's newest software system *COM.FILE* extends the translation capabilities of the Keyword 7000, a disk-to-disk conversion device that allows information created on incompatible word processors to be exchanged and translated in fully revisable text form. *COM.FILE* is designed to provide the transmission link between incompatible systems and remote locations.

Through Keyword 7000, peripheral hardware driven by an IBM PC or compatible, documents created on say, an IBM Displaywriter 8 inch disk, can be viewed and revised on a PC using *WordStar*. *COM.FILE* facilitates transmission of such documents to intra- or inter-office locations using existing telephone lines, PBX systems, local area networks or wide area networks.

"The Keyword 7000 reads the disk of the source system and converts it to a universal format which allows it to be either transmitted, stored or revised in the target system. After that, *COM.FILE* software allows it to be transmitted to distant locations," says Keyword's manager of marketing communications, Julie Griffin.

The software is aimed at large corporations, especially the Fortune 500, which either already have computer equipment they are unwilling to part with or are considering purchasing new equipment, or some combination of the two. It also applies to the legal and government markets. Says Griffin, "This frees up various departments within large companies to purchase the equipment they need without fear of compatibility or transmission problems with other departments."

This also means that companies are not obliged to standardize around a single vendor. The Keyword 7000 plus *COM.FILE* can also archive documents, which is to say access data files regardless of their age or degree of computer modernity.

"Large companies do have compatibility problems," says Griffin, "and that's because there is no standard for the industry yet. We hope to aid companies in creating that standard of communicating in code."

The Keyword 7000 uses the Keyword Standard Interface Format (KSIF) chip to break a document down into code. "Because the KSIF chip is a superset of all codes, it allows complete and clean conversions of a document from the source system to the target system. The *COM.FILE* software then sends it in complete high fidelity," Griffin adds.

In addition, the software is easy to use, is menu-driven and incorporates context-sensitive menus.

The Keyword 7000 was launched in October, 1984. However, from 1979 to that date, Keyword was a service bureau headquartered in Alberta, Canada, with U.S. operations based in San Jose. It handled document preparation and acted as equipment-purchasing consultants for large corporations. "We saw that there were multiple systems in offices that weren't working together and that companies were unwilling or couldn't afford to buy new systems. The expense and learning curve were too high for some companies. So we started developing this device to fill a need in the marketplace," Griffin says. (Keyword Office Technologies, 2047 Hamilton Ave., San Jose, CA 95125, (408) 371-7770.)

Prod/Net: Micro-To-Mainframe Linking

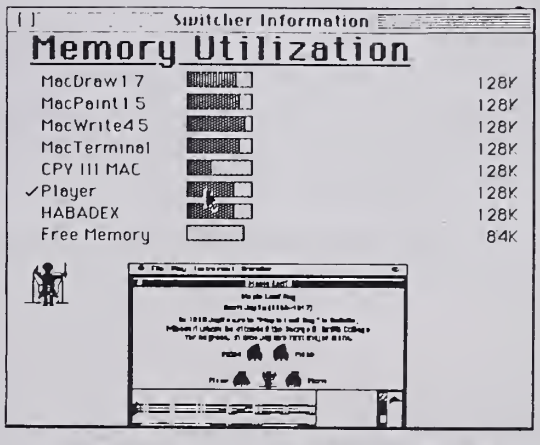
The Prod/Net office automation system from Computer Corporation of America, Cambridge, Mass., starts in where isolated personal computers and mainframes leave off. "The software is designed for companies that already have personal computers and a host mainframe and now have to tie the two together," says Supriyo Sen, vice president and general manager for Prod/Net.

The software, which communicates at a peer level with an IBM host mainframe or compatible, performs four functions. It provides for end user interface, multi-tasking and sharing files between PCs both inside and outside the local area network. These are facilitated by a network operating system. Prod/Net also provides for several office applications as well as access to the host mainframe.

End user interface allows the operator to select icons, small clearly labeled pictures, to enter a program without having to master a complex set of command sequences. Thus, the user can be productive immediately and be able to use the program on the first shot. "It cuts down the learning time necessary to operate complex programs, so that if you want to get into *Lotus*, for example, you just select the icon and it takes you right into the program," Sen says.

Multi-tasking with windowing capabilities allows the user to perform several functions at once. "This conforms to the natural way people work. If you are in the middle of writing a document you can still perform an electronic mail function or execute a search. If you are printing something and you need another document, these things can be done

Fatten Your Mac All The Way To Mac MEGABYTES™

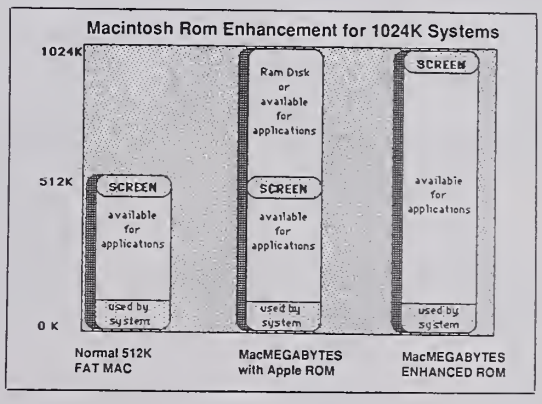


Switcher shows 8 applications with MacMegabytes™ and ROM Enhancement.

1 MEGABYTE
Internal RAM Memory

INCLUDES FREE SOFTWARE

- PLUG-IN CIRCUITBOARD-with 512K additional RAM
- 1024K SYSTEM DISK for large application (FREE SOFTWARE)
- RAMDISK SOFTWARE. Run large database FAST. Run larger programs. Use 512K for a full size RAMDISK and still have a full 512K Fat Mac! (FREE SOFTWARE)
- MacMOVIE SHOW-Digital Movie Demo. Amaze your friends with Macintosh Movies.



Available Upgrades

ONLY

- 512K to 1024K RAM w/ROM Enhancement. **$648.00**
- 128K to 1024 K RAM w/ROM Enhancement **$948.00**

90 Day Guarantee on All Parts and Labor We Install!

Call Beck-Tech or your authorized MacMEGABYTES Dealer for conversion appointments.

San Francisco AAO Computers - Software For Less Ron Shafer 37 Vicente St. SF. CA. (415) 953-1066	Cupertino Mac Aid 19925 Stevens Creek Blvd #110 Cupertino, CA 95014 (408) 973-7810	Los Angeles AEG Electronics - Rick Huntington 19434 Londelius St. Northridge, CA (818) 886-7677
Sausalito MICAH 15 Princess St. Sausalito, CA (415) 331-6422	New York City Dr. Pete Killcommons 515 W. 59th St. Suite #16B N.Y. 10019 (212) 307-5718	Washington, DC Barbara Beck 6057 Arlington Blvd. Suite A Falls Church, VA 22044 (703) 533-9100
Dallas, TX SMS Systems Corporation Joe Courtney 555 Ranch Trail Suite 206 Irving, Texas (817) 481-9555	Pittsburgh , PA Besco 5284 Steubenville Pike Pittsburg, PA 15205 (412) 923-2533 Stan Malecki	New Zealand Southern Software Int'l, Ltd. 58 Symonds St. Auckland 1, New Zealand Terry Teague, Les Chapman 525-398-410
Geneva Switzerland Brady Electronics - Kevin Brady 10 Avenue Dunignon 1219 Lignon, Suisse 97-29-47	Stockholm, Sweden DATUM Systems 11420 Stockholm, Sweden 673-568 Keith Elkin, Leonard Ekman Birger Jarlsgaten	

Beck-Tech

Claremont Hotel
41 Tunnel Road
Berkeley, CA 94705
415/548-4054

Source: CL0765
Telex: 701082

Computer Retailers

We Can Save You Money by Training Your Customers

For a fraction of the cost it would take for you to provide these services yourself, we will give your customers who purchase a new IBM PC or compatible system our own 3½ hour Introduction to Microcomputers course. You can offer discount coupons or package the class in as part of your sale.

Now, through our new retailer support program, you can offer our professional training classes as part of your own computer sales and after-sale support. Start saving money now!

Course offerings include:

- Introduction to Microcomputers
- Lotus 1-2-3
- dBase II & dBase III
- Framework
- MultiMate
- WordStar & WordStar 2000
- Many Others Available

Call us today for details on how you can start providing this valuable service to your customers.
We are an authorized training center for Ashton-Tate and Enable.

COMPUTERGAP
Training Center

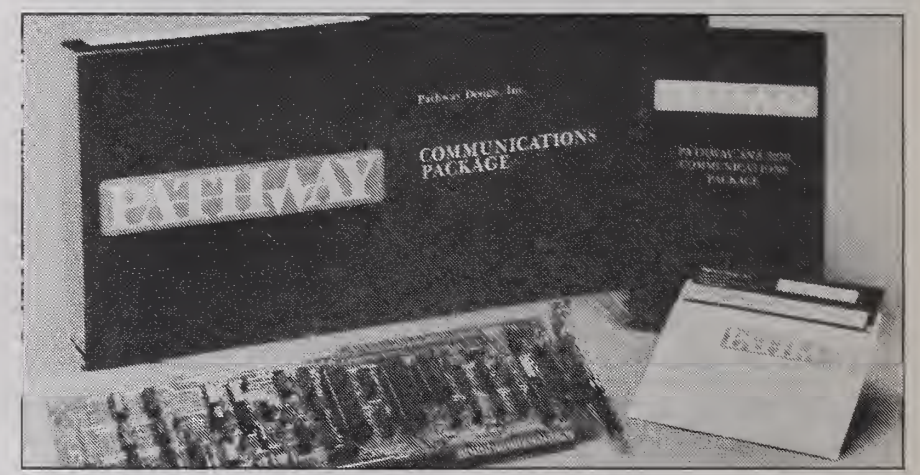
557 Pilgrim Dr., Suite A,
Foster City, CA 94404
(415) 345-4801

simultaneously," Sen adds. In addition, with the windowing capability, the user can hide or show the window on the screen to mark the progression of one process without having to interrupt the program currently running.

The software allows applications like long distance electronic mailing outside of the LAN as well as electronic stapling, so that editorial and other messages pertaining to a single subject can be transmitted at the same time. It also assists in scheduling and time organization and allows host terminal emulation in which the PC can act as a terminal to the host.

"The software extends the environment to access the host so the user can get at data that previously was only available through the mainframe. The operator can download that data on the PC and share it with the other PCs in the department, thus eliminating complete dependence on a slower mainframe," Sen says.

The software is a time-saving device that also protects a company's investment in older equipment, particularly terminals that are not PCs. With Prod/Net, such equipment can still be part of a network and participate in electronic mail capabilities. "Part of the function is to protect the company's investment in hardware so they don't have to buy new equipment with every new technology," Sen adds.



pcPath **facilitates communication between intelligent personal computers and host mainframes.**

New PCs? Old Mainframe? Take The *pcPath*

The missing link between micro and mainframe is being bridged by *pcPath* software, which facilitates communication between an intelligent personal computer and a host mainframe. Working alongside an IBM PC or compatible, this software, from Pathway Design, Inc., of Wellesley, Mass., allows a PC to talk directly to a mainframe via dial up, leased lines or dedicated lines.

Aided by a synchronous line modem at the PC terminal, a user can upload and download files, access data from a mainframe that doesn't speak the same language, and "fool the host mainframe into thinking it's communicating with its own 'dumb' terminals rather than an independently intelligent PC," according to Deborah Fanton, marketing communications manager.

"The problem was that offices needed to communicate with a mainframe. But their original terminals were simply screens without any independent function. When the so-called dumb terminals got replaced by PCs, they had a lot more capacity, but it still didn't solve the problem of communicating or sharing files with the mainframe," Fanton explains.

This technology has proven a boon to the insurance industry, though the product also applies to medium- to large-sized companies in the health care, manufacturing, distribution and financial services industries. However, a quarter of Pathway Design's customers are insurance companies. "Independent agents can use their PC to access an entire customer data base including files, applications, policy numbers and claims, as well as using the PC for their own applications," Fanton says.

The banking industry may also avail itself of the benefits of *pcPath* software, using it for fund and wire transfers.

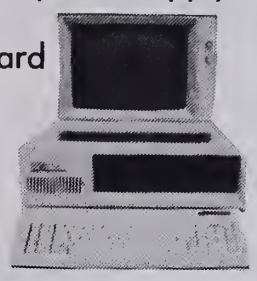
"The Iowa Department of Transportation uses it to check driving records when people want to renew their licenses," Fanton says. "The device allows them to check driving records or any violations outstanding."

pcPath also provides a printing support mechanism, which can be used for local printing of host reports on the PC printer. (Pathway Design, 177 Worcester St., Wellesley, MA 02181, (617) 237-7722.) □

PC/XT/Apple* Expansion Products

XT COMPATIBLE SYSTEM

Includes: 256K Motherboard w/case, 130w power supply keyboard, Floppy controller card, 2½ ht. drive, 6 pak compatible multi-function board w/256k, Color graphics card

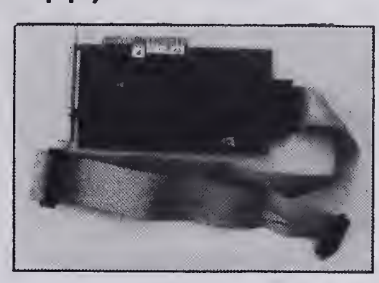


Sale $995.00

Special!

Floppy Disk Controller Card w/Cable

Orig. $55.00

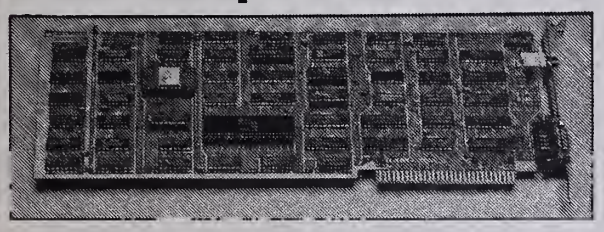


Sale $49.00

Multi-Function card with 384K Ram & Game included	$150.00
AST-6 Pak with 384K Rom included	$249.00
AST advantoge board for AT with 128K	$385.00
8osic Time-8T 6 Pak with 384K Rom included	$230.00
Sigma Designs-Maximizer with 384K Ram included	$220.00
Quadram baord with 384K Ram & Gome included	$209.00
DISK I/O Card-Floppy Disk Controller, 2 Seriols, parollel part, clock & game (2nd Ser. opt.)	$120.00
256K Ram cord plus parallel part with 0 memory option	$57.00
Serial card with 1 serial port	$45.00
Serial card with 2 serial parts	$53.00
Floppy disk control cord with cable & brocket (PC)	$55.00
High Resalution Graphic color card 400 by Sigma Designs	$550.00
Qubie 300-1200 8aud Modem for PC (Internal)	$239.00
Qubie 300-1200 Baud Madem far PC (External)	$259.00
Calar graphic card (RG8 & Composite)	$90.00
Monochrome card with porollel part	$90.00
7 slats Mother 8oard - XT compatible 8IOS Ram included with built in Floppy cantraller, 2 seriols, 2 porallel parts, real time clock & 640K included	$499.00
8 slots XT-compatible Mother 8oard fully populated to 256K	$199.00
PC-88 CPU card - 7 slats PC spacing mather bus, 4.7 mhz 8088 cpu, supports the 8087 math caprocessor, full 18M bus campotible, twa 2764 Eprom sockets for system firmwore, 1 PC 8IOS Ram included	$250.00
Sigma Expansion Chossis - 100 watt power supply, 8 slots case, 1 pair tronsceiver cards included with extensian cobles	$695.00
Hard disk cantral card by DTC 51508X with cables	$180.00
Hard disk control cord by Western Digitol with cables	$165.00
WD 1000-50 hard disk controller for general purpose	$90.00
5M8 full height hard disk by Seagate with DTC cantral card	$250.00
10M8 ½ height hard disk by Microscience #612	$365.00
20M8 ½ height hard disk by Micrascience #HH725	$550.00
10M8 ½ height hord disk by TEAC #SD-510	$335.00
10M8 ½ height hard disk by Seagate #212	$315.00
20M8 ½ height hard disk by Seagate ST225	$485.00
10M8 ½ height hard disk by Tandon (TM252)	$250.00
15.75M8 (Formatted) full height hard disk by CMI (5619)	$275.00
40M8 full height hord disk by Quantum Madel #Q540	$599.00
Teac FD-558 ½ height DSDD	$95.00
Teac FD-55F ½ height DSDD	$125.00
Shugart 5o-455 ½ height DSDD	$90.00
Panasonic JA-455 ½ height DSDD	$90.00
Tandon 100-2 full height DSDD	$110.00
CDC full height DSDD	$110.00
HP full height DSDD	$75.00
Deluxe capacitance type keyboard	$75.00
PC keybaard	$70.00
Keytranics 5151 campotible keyboard	$115.00
Staff K-4 keybaard far PC	$70.00
PC-6 slots (rear switch) hinged tap case	$75.00
XT-8 slats (side switch) hinged tap cose	$75.00
XT-8 slots (rear switch) hinged top case	$75.00
Parallel port to Centronics cable 6 feet	$12.00
Porollel port to Centronics coble 10 feet	$15.00
D 25 mole-mole serial coble 6 feet	$15.00
D 25 male-female serial cable 6 feet	$15.00
D 25 femole-femole seriol coble 6 feet	$15.00
130 wott pawer supply (rear switch)	$105.00
130 watt XT power supply (side switch)	$105.00
Manitor stand - 11" x 10.4"	$10.00
Monitor stond - 14.2" x 12.2"	$14.00
Jaystick far Apple * II, Apple * IIe, PC	$18.00
Joystick far PC Jr	$25.00
5¼" flappy diskettes storoge holds 100	$13.50
AC power center with surge protection	$12.00
9 slat mather bus-XT spacing	$30.00
8 slot mather bus-PC spocing	$30.00
Memorex diskette DSDD (10 per bax)	$14.00
Apple* II compatible switching pawer supply: autput + 5VDC 5A; -5VDC 0.5A + 12VDC 2.5A; -12VDC 0.5A; Size 9.8" L x 3.5" W x 2.2" H	$46.95
Apple* II type DC plug	$49.95
Campatible keyboard - upper + lower case (internal) for Apple*	$64.95
Campotible keyboard - upper + lawer case (detached) for Apple*	$85.00
16K Ram Expansion card	$35.00
Flappy controller cord far Apple*	$40.00
Add-on disk drive with cobinet + cable far Apple*	$90.00
Apple* II ½ height disk drive	$109.00
Apple* C ½ height disk drive	$115.00
Analog cord for Apple* II full height drive	$17.00
Apple* keyboard (upper case only)	$25.00

*A Registered Trademark of Apple Computers Inc.

Color Graphics Board



Orig. $90.00

Sale $82.00

CPM'S & SUPPORT CHIPS	
Z80 CUP/CTC	$2.50
Z80 P10	$2.50
Z80A CPM	$2.50
Z80A CTC	$2.50
Z80AP10	$2.50
Z80ADART	$6.95
Z80A DMA	$10.00
Z80ASI0/0	$10.00
Z80ASI0/1	$10.00
Z80ASI0/2	$10.00
Z8001	$18.00
Z8002	$18.00
Z808CPM	$6.00
Z808CTC	$6.00
Z808P10	$7.00
Z808DART	$12.00
Z808S10/0	$18.00
8031AH	$10.00
3051AH	$20.00
8035L	$3.00
8080A	$3.00
8085AH	$5.00
8085AC-2	$7.00

80287-3	$2.10
8087-3	$100.00
8087-2	$125.00
80286-6	$100.00
80287-3	$185.00
80186-3	$30.00
8026	$15.00
8039H	$4.00
8086	$10.00
8086-2	$12.00
8088	$12.00
8088-2	$12.95
8155	$3.50
8212	$2.00
8214	$3.00
8216	$2.00
8226	$2.50
6847	$7.50
8207-2	$15.00
8237A5	$7.00
8243	$3.50
8250N-8	$8.00
8251A	$3.50
8255A	$4.00
8251A5	$3.50
8253-5	$4.00
8255-5	$4.00
8255AC2	$4.00
8257-5	$3.50
8275	$18.00
8284A	$4.00
8288	$7.00
83048	$1.60
8741A	$10.00
8748	$10.00
8748-8	$10.00
8755A	$20.00
6502	$3.00
6502A	$3.50
65028	$4.00
6845	$5.00
6551	$4.00
6551A	$4.50
6520	$3.00
6520A	$3.50
6545A-1	$7.50
58167AN	$8.00
8254	$6.00
8254-2	$6.50
8259A	$4.00
8272	$7.50

EEPROM	
48016	$6.00

DISK CONTROLLER CHIPS	
17971P-02	$16.00
1771N-1	$8.50
1791B-2	$12.00
17938-2	$13.50
765AC	$7.00
7201C	$7.00
7106CpL	$3.50
9914NL	$7.00
9927NL	$10.00
1010AL-00	$15.00
1010AL-01	$12.00
1010AL-05	$28.00
2797pL-02	$20.00
7220D-1	$30.00
8274	$10.00
96S02	$2.00
96L02	$2.50
2652A	$8.00
2964BPC	$8.00

DYNAMIC RAMS	
4416-150	$2.00
4116-250	$.80
4116-200	$.95
4116-150	$1.00
4164-200	$1.40
4164-150	$1.50
4128-150	$5.50
41256-15	$4.50
41256-12	$4.50
4164-12	$1.60

STATIC RAMS	
2111A4	$1.00
21L02A35	$1.00
2101A2	$1.25
1224L200	$1.50
2114L450	$1.00
2016AP-1	$4.00
2016C-25	$3.50
6116P3	$3.00
6116P4	$2.80
6116LP3	$3.50
6116LP4	$3.25
4044-250	$4.00
2112A4	$1.20
2128-20RS	$3.80
2128-15RS	$3.90
6264p-15	$10.00
6264p-12	$11.00
6264Lp-15	$12.00
6264Lp-12	$12.80
58725p-14	$4.00
2116N-20L	$3.80
5116Ap-15	$4.00
5101EL-3	$1.50

PROMS	
82S100	$6.50
82S129	$2.00
82S123	$2.00
82S131	$3.00
82S137	$3.50
Prices per 100 pcs & Up	
4164-15	$.70
41256-15	$3.00

EPROMS	
68766-350	$10.00
2708-450	$2.50
2716-450	$2.50
TMS2716	$3.50
2716-390	$3.00
2716-350	$3.00
2732	$3.50
2732A-3	$3.75
2732A35	$3.75
2732A25	$4.50
2732A20	$4.65
2532-450	$3.75
2764-450	$3.80
2764-300	$4.00
2764-250	$4.25
2764-200	$5.40
27C64-15	$10.00
27128-25	$7.00
27128-15	$8.50
27256-25	$12.00

Microware Exceltek

421 Grand Avenue, 2nd Floor, South San Francisco, CA 94080

T (415) 952-5375 77 • Fax (415) 952-3057

Monday-Friday, 9-5pm

Technical Line & Santa Clara Retail Store, 2110 Walsh, Unit D

(408) 727-0906

1-6pm Monday-Friday, Closed Wednesday, Sunday

Stop by or order by mail

All Parts 100% Guaranteed!

Terms: For shipping & handling charge (under 1 lb.) include $2.50 for UPS Ground, $3.50 UPS Blue, $3.50 for 1st Class Mail C.O.D. Calif residents add 6½% sales tax.

Improving On The IBM Standard?

The Life And Times Of Corona Data Systems

By Jeff Spurrier

"The original idea three years ago was that the only way you could start a micro computer company and be successful was to take advantage of the software being developed for the IBM PC," says Dr. Robert Harp, founder of Corona Data Systems of Thousand Oaks.

That might sound like a great idea now, when IBM compatibility is the *de facto* standard of the PC world, but back in the dark ages of the early eighties such a proposal was by no means a sure thing.

When Corona Data Systems debuted their first products — a portable and a desktop, both IBM compatible — at the November, 1982 COMDEX, the parameters of personal computing were strikingly different from what they are today.

In 1982 CP/M was still a viable growing reality, Apple was the tough, street-smart, home user-oriented new kid on the block, and IBM was the spoiled rich giant from uptown, grown bloated and boring from years of unchallenged corporate domination. Many felt that the rough-and-tumble world of the personal computer market was a whole new ballgame, one that the big blue machine from Armonk, New York, was too old, too out-of-touch, and too lazy to win.

Now, of course, things have changed radically. In the last few years, scores of different "IBM compatibles" have been brought onto the market as PC manufacturers around the world have united for a never-ending chorus of "Send In The Clones." Even such a stalwart proponent of CP/M as Kaypro has acknowledged the facts of life and has sought a piece of the PC pie with the AT-compatible 286i and the PC-DOS laptop Kaypro 2000.

And ironically, even while IBM has achieved an unprecedented standard in personal computing, the company has demonstrated a remarkable lack of market smarts in a variety of products, from the PCjr and the PC Portable to the AT hard disk and TopView.

Such embarrassments obviously don't bother Dr. Harp or his associates at Corona, however, for improving on the IBM standard is what life is all about in compatible circles.

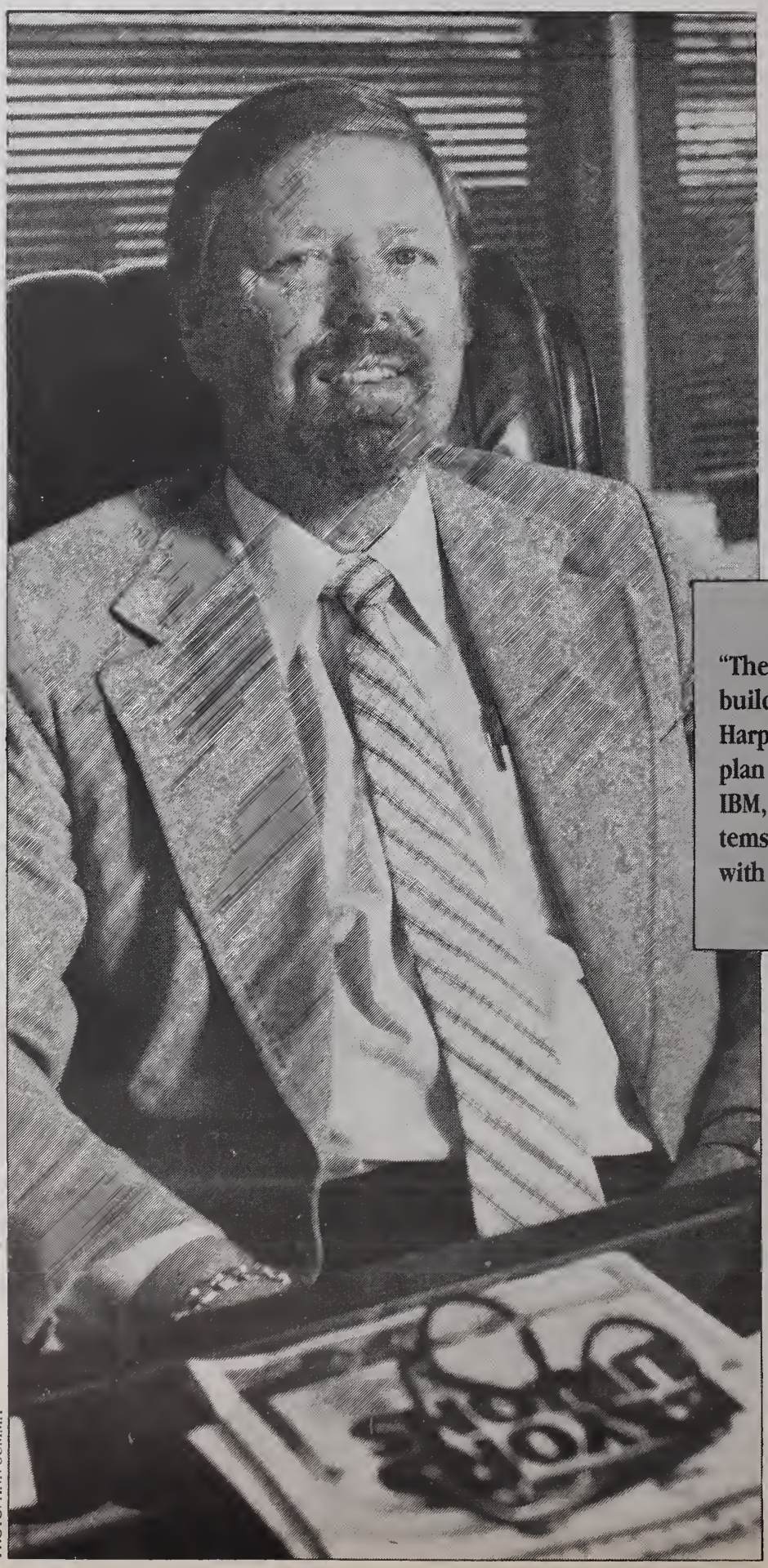


PHOTO: ANN SUMMA

"What we try to offer are products that offer some increased benefits over what's available from IBM," says Harp. "We offered a hard disk on our system six months before IBM did (on the XT). Originally the PC was targeted at the Apple II market — they had a system that used a tape cassette as the I/O device and an outlet for connecting to a home color TV. Well, they found out that (the home user) wasn't the market, and they sold very few of the low end configurations. We recognized the real market for the system — a business market. We provided half a megabyte of RAM on the main board when IBM had only 64K."

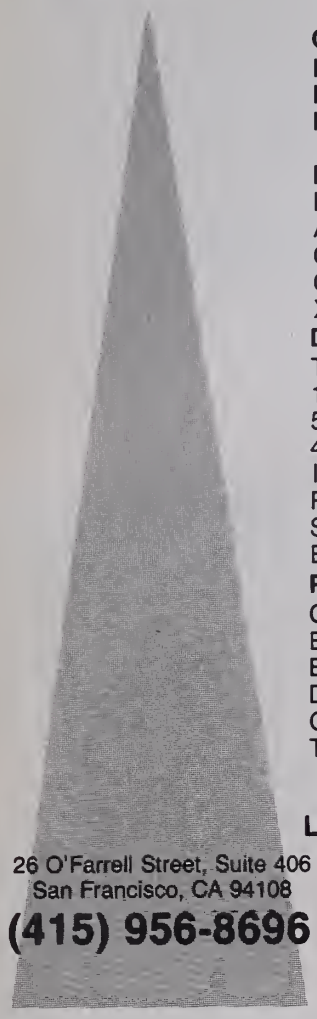
Giving more bang for the buck has proved to be a reliable strategy for Corona, for as Harp notes, simple imitation just won't do the job.

"There's absolutely no reason to build a PC clone," says Dr. Robert Harp, founder of Corona. "Our whole plan was to avoid competing with IBM, but it is essential to build systems that work with PC software or with the installed base of PCs."

"There's absolutely no reason to build a PC clone," he says. "That's not the purpose. Our whole plan was to avoid competing with IBM, particularly the first few years we were in business. But it is essential to build systems that work with PC software or with the installed base of PCs. That's where the market is."

With over four million installed PCs, he adds, makers of simple clones are doomed to failure. "In order to sell a clone you have to undercut them by 30 – 40%, so where's your profit?" he notes. "It's hard to stay alive in that business, because IBM has to be the lowest cost manufacturer, simply because of their tremendous volume and the fact that they take advantage of offshore manufacturing. The only way you can compete is by cutting your profit to the bone, and that doesn't give you any funds to advertise. You don't

WE SELL, DELIVER, & INSTALL



COMPUTERS

IBM PC 2 ½ HT DR. 256K	$1549
IBM XT 1 DR. 256K	1829
IBM XT 1 DR. 256K 10/20MB. HD	2325/2475
IBM AT 1 DR. 512K 20MB. HD	3890
ITT 256K 2 DR. Full Mono System	1575
AT & T 6300	1875
COMPAQ Portable W/2 DR.	1995
COMPAQ Deskpro	CALL
XT Compatible Full Mono System	1275

DRIVES & BACKUPS

TEAC ½ HT Floppy	$98
10MB./20MB. Hard Disk	490/645
50MB. For AT	1425
45MB. Tape Backup INT/EXT	995/1095
Iomega Bernouli 20MB. *2 DR	2799
Prime Tower 80 to 160 MB.	CALL
Sysgen Products	CALL
Expansion Chassis	CALL

PRINTERS & PLOTTERS

Okidata 192/193	$370/519
Epson All Series	CALL
Brother 15/25/35	395/649/899
Diablo D25/630/630	595/850/1650
QUME Letter Pro	445
Toshiba 1340/351	550/1199
NEC 3550/8800	1170/1595
Panasonic 1090/P3151	199/475
Cannon Laser Jet	2795
Corona Laser Jet	3295
Amdek Amplot II 6 PEN	595
Houston Instruments Plotters	CALL

CALL FOR HP. DATA PRODUCTS & OTHER MODELS OF ALL PRINTERS & PLOTTERS.

SOFTWARE

DBASE III	$399
Wordstar Propack 3.31	299
Lotus	299

CALL FOR ANY SOFTWARE...LOW LOW

MODEMS

Hayes 1200/1200B	$419/345
Hayes 2400 BD	699
Anchor Signalman Exp	295
Racal-Vadic 1200BD	375

MONITORS

IBM Monochrome	$245
P.G.S MAX12/HX12	175/439
P.G.S SR12	545
Amdek 310A	155
NEC Mono/Color	125/299

CALL FOR ALL DIFFERENT CONFIGURATIONS

FUNCTIONAL CARDS

AST Six Pack + 64K & Sidekick	$245
AST Advantage 128K	439
Sigma Maximizer 64K	180
Paradise 5 Pack	170

CALL FOR TECHMAR, UNIVATION, ORCHID TECHNOLOGY, QUADRAM & TAIWAN MADE.

VIDEO BOARDS

IBM Monochrome	$215
Hercules Graphic/Color	295/159
Genoa Spectrum Color & Mono	295
Sigma Color 400	549
Techmar Graphic Master	450
Paradise Modular Display	270
Everex Graphic Edge	339

MISCELLANEOUS

RAM Chips 64K/128K/256K	$ LOW
Sound Mufflers for printers	CALL
Key Tronic 5151 Key Board	170
Non-glare screen	39
Computer furniture & stands	CALL
Dysan DS/DD	29
Data Life DS/DD	22
Printer cable 6'/10'	15/17
Disk Banks 25/50 W/Lock	17/25
Surge protector	40
Saft Power Backup Unit	550

Leasing & Rentals Available

Open 7 Days, Mon-Fri 8:30-6:00 Sat-Sun 10-5 Call First

26 O'Farrell Street, Suite 406
San Francisco, CA 94108
(415) 956-8696

COMPUTOWN

Northern California's Largest Selection of Mac Software and Accessories at

20% OFF Retail Prices

OMNIS 3

Software Specials

OMNIS 3

The fastest & finest relational database program for Macintosh today!

List $495.00

Sale $325.95

Jazz

and 1 MB UPGRADE
512K to 1024K
(Beck Tech)

SALE $849.95

Over 550 Software Packages Available
Test Drive Your Mac Software Before You Buy
*Laser Printing available * Bring in your disk *We offer support before and after sale

Mac Upgrades

New ROM (Beck Tech) Upgrades	Only $99.95
128K RAM Upgrade to 521K	Now $349.95
128K RAM Upgrade to 1024K	Now $849.95
512K RAM Upgrade to 1024K	Now $549.95

Prices include 1 year guarantee on Parts and Labor

SPECIAL THIS MONTH

New Mac 1 Meg System

with New ROM
Upgrade (Beck Tech)

ONLY $3195.95

System Includes: Image Writer Printer & External Disk Drive

1 YEAR GUARANTEE!

We also install internal hard disk (10 Meg)

$25 OFF UPGRADE WITH THIS COUPON

SOFTWARE FOR LE$$

37 Vicente Street
San Francisco, CA 94127
(415) 753-1066 ask for Ron

have the economics of scale that IBM has, or the name."

The only solution is for compatible makers to satisfy a market that IBM has not targeted. A case in point is Corona's rival Compaq, which took advantage of the attractions of portability at a time when PCs were scarce and the demand was high.

Now that some of that demand has been satisfied, the only option left for compatibles is to offer systems that address needs that IBM has failed to meet or to create peripheral systems where IBM has been unable to set a standard. Corona, while slow out of the starting gate, has managed to build a sizable base (over $65 million in 1984) thanks to just such forward thinking. The Corona 400-series has received high marks from reviewers for its speed and excellent resolution, complete with two software selectable display modes — one which provides the IBM standard of 640 by 200 lines and an enhanced mode which features 640 by 400 lines.

More significantly, Corona has jumped into the peripheral fray with two products which deal with desires not yet standardized by IBM — printers and networking.

The Corona LP-300 laser printer offers text and graphics at a resolution of 300 by 300 dots per inch and supports several different fonts and type sizes on the same page. Images can be magnified up to 250 times vertically on the printer, which can push out copy at a rate of 500 characters a second (eight pages a minute). Compared to a number of other high quality printers, including the HP LaserJet, the Corona comes off like gangbusters, noted a recent rave review in *PC World* (July, 1985).

Also attracting notice is Corona's solution to the multi-user, multitasking confusion: the Corona Mega-PC, defined by Harp as "a network in a box."

"(The Mega-PC) really has the architecture that is ideally suited to run PC software in a true multi-user fashion," says Harp. "In the Mega-PC we have cards with the complete functionality of a PC plugged into a bus that is controlled by a master file server. The communication between these different cards — which represent different users — is by the parallel bus at a very high transfer rate. There's no delay in transmission and no corruption of the data by noise as you might get in a network. You also eliminate all the packaging and the multiple power supplies, boxes, and cables (found in linking separate PCs linked by a coaxial cable system)."

The multi-user system is the latest hot topic in the PC world, he adds. And sooner or later the issue of how such systems should be built will be resolved.

IBM compatibility, while not necessarily representative of the cutting edge of technological potential, is still a standard, successful because it benefits the end users as well as programmers.

"Multi-user applications have not yet developed," says Harp. "There are no applications for UNIX-based systems, and the alternative architecture, such as the LAN (local area network) or LAN-in-a-box (such as the Mega-PC) have yet to develop their full market potential. The jury is still out on (the standard)."

And in the world of PC compatibility, observing a standard is the name of the game — not just standards for the MS-DOS operating system, but for the IBM machine as a whole. That was the failure of CP/M, which Harp defines as "not dead but moribund."

"There's nothing wrong with CP/M," says Harp. "Certainly from a user's point of view MS-DOS is not a major improvement. The weakest point of CP/M was that it was not as complete a standard as MS-DOS is today. It didn't encompass things like memory mapped video, and disk formats — things which are not necessarily a property of the operating system but are (part of IBM) PC compatibility.

"Throughout the industry people are finally coming to the realization that (PC compatibility) is the only alternative," he adds. "Three years ago there were people with incompatible systems who were saying 'Oh, the PC is a flash in the pan. It's no meaningful way to go.' Well, it didn't work out for them. They're all coming to realize that you have to provide PC compatibility. The companies which still have incompatible systems are running into what I call the PC barrier — a barrier to selling any system which won't run PC software. If you look at the various channels of distribution, each is sensitive to compatibility to varying degrees. The most sensitive is retail, followed by OEMs and value-added resellers. The last stronghold of incompatibility are some of the mainframe manufacturers or large OEMs, which are still trying to sell systems that won't run PC software. Within the next year or so everyone will cave in."

IBM compatibility — while not necessarily representative of the cutting edge of technological potential — is still a standard, one that is successful because it benefits the end users as well as programmers.

"If you compare today to the old days of CP/M, the standard today is terrific," says Harp. "You can order a disk off the shelf and it will run on your system without any questions, providing it's fully compatible. There won't be any quirks, things that don't work. (The user) won't have to write custom drivers and things like that that you had to do with CP/M. And because there is such tremendous sales potential, software vendors are climbing all over each other to provide high quality competitive software."

And while things have certainly progressed thanks to the standard set by IBM, Harp says that continued expansions in power are not necessarily inevitable. The jump from 8-bit machines to 16-bit represented a major leap in potential. Jumping the next barrier may not come so quickly.

"I don't think that 32-bit is necessary," he says. "There will be true 32-bit machines on the market in a year or so. The first true 32-bit chip was the 68020, and people are designing that into multi-user systems, and there isn't really a big market for them. The Intel chip, the 386, probably won't see the light of day for another year or so. For general office purposes I think (32 bit) is overkill.

"It's not always true that things develop in one direction. Sometimes they come back. In automobiles, for example, they started with one cylinder and progressed up to four to six to eight and even twelve and sixteen cylinders. The old Lincoln V-12 and V-16 were luxury cars, but they weren't successful, so things retreated to eight cylinders. Now with the increased cost of gas we've gone back to six and four cylinders. I don't think that people need or can justify the cost of 32 bit systems, except in applications that are scientific or industrial where you really need to do a lot of number crunching."

"What we try to offer are products that offer some increased benefits over what's available from IBM," says Harp.

Such views may not follow the standard Silicon Valley party line, but that's hardly surprising. While Harp received his Ph.D. in electrical engineering from Stanford, much of his professional life has taken place in the Southland. There are advantages to life outside the eye of the hurricane, he says.

"There's more information flow in the trade press than in the rumor mill," he maintains. "A disadvantage of being up north is that costs are higher and there's a tremendous turnover in people."

Operating outside of Silicon Valley does have its disadvantages as well, however. There are fewer engineers to choose from in Southern California, a fact that has led Harp to recruit many of Corona's designers from England where salaries are strikingly lower.

And while it's possible to pick up workers from abroad, it's not so easy selling computers there. Even though Corona has a strong toehold in Asia, thanks to a distribution agreement with its offshore manufacturer, Daewoo Electronics of Korea, the possibilities of breaking through in the blossoming Pacific Rim are less promising than some now speculate.

"They'll make their own (computer systems)," says Harp. "There are dozens of companies building PCs in Asia — in Japan, Korea, Taiwan, Singapore. And yet they haven't all recognized the importance of PC compatibility."

And compatibility is the bottom line — a fact that Harp says even IBM has failed to recognize. "Half of their systems don't even have graphics capability and therefore can't run a great percentage of the software," he says. "Half of the IBM systems out there won't run *Flight Simulator*. All of our systems run it. We feel we're much more compatible than IBM is."

And, as of July 17, 1985, Corona is also much cheaper. Citing enhanced relationships with hardware suppliers as well as an improved financial position, Corona slashed prices by as much as 49% on a number of its most popular desktop and portable computers. For as little as $1495 one may now walk away with the PPC-400-22, which features 256K RAM, dual 360K floppy drives, dual resolution modes, four fully powered expansion slots, an enhanced IBM PC-style keyboard, and a main board memory expandable to 512K. For an extra $800 one can pick up the PPC-400-XT model which includes a 10-megabyte hard disk. □

AMERICAN DIGITAL DISCOUNT ASSOCIATION, INC.

DIRECT MAIL MARKETING COMPAN

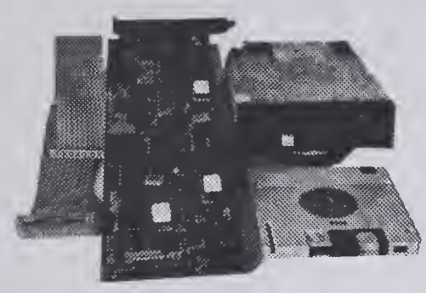
SUPER PC/XT SYSTEM

Our Price $1195.00

Includes:

- With 256K on Board
- CPU: 16 Bit 8088 with Optional 8087 Coprocessor
- Expansion Slots: All 8 Are IBM PC/XT Compatible
- Two Half Height, 360K 5¼" DS/DD 48 tpi Floppy Disk Drives and Controller
- Hi-resolution Monochrome Monitor with Color Card
- Multfunction Keyboard
- Runs PC-DOS/MS-DOS and CP/M-86
- 135 Watt Power Supply

HARD DISK SYSTEM



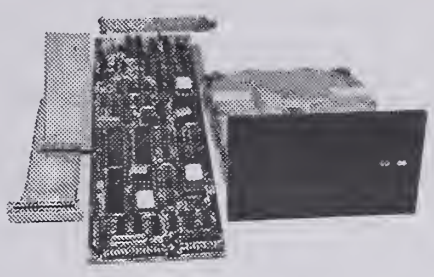
I: Five Meg Removeable
III: Ten Meg Removeable

- Controller Included
- High Reliability - Directly Bootable
- Expand to virtually unlimited capacity with these 5 Mb cartridges
- Additional cartridge (5Mb - $120) (10Mb - $150)

5Mb **$999.00**

10Mb **$1395.00**

HARD DISK SYSTEM



II: Ten Megabyte Non-Removable

- High Reliability
- Controller Included
- Convert PC to XT Economically
- Fits Into One Disk Drive Slot

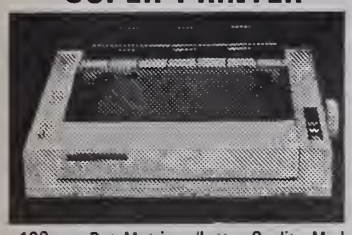
10MB **$495.00**

20MB **$695.00**

33MB **$1295.00**

by RODIME High Performance

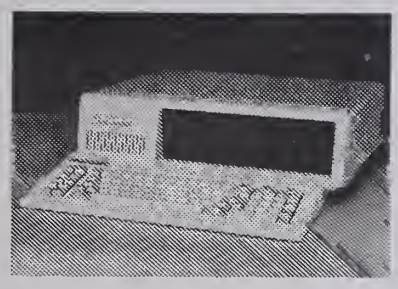
SUPER PRINTER



- 120 cps Dot Matrix w/Letter Quality Mode
- Friction & Tractor Feed
- Epson Compatible

$259.00

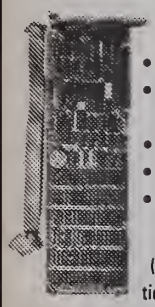
BASIC SYSTEM UNIT - Only $695.00



Features:

- IBM PC/XT Compatability
- With 256K Memory On Board
- 8 IBM Compatible Expansion Slots
- Multifuntion on Keyboard
- Keyboard Cable
- 135 Watt Power Supply
- Factory Warranty

SUPER 384 Multifunction Card



- Parallel Port & Serial Port
- Memory Expansion from OK to 384K (see below)
- Battery Backup Clock
- Game Port • RAM Disk
- Spooler (Print)

OK Memory **$189.00**

(Add $9 per 64K for additional memory up to 384K)

DISK PLUS I/O

- One Card Consists of: Floppy Dive Controller Parallel & Serial Ports
- Consumes Only One Slot of Your I8M PC/XT or Compatible Computer

$139.00

HARD DISK CONTROLLER

- Hard Disk Controller for 5, 10, 20 and 33 Meg Hard Disks
- IBM PC/XT Hard Disk Controller Compatible

$199.00

½ HEIGHT - 360K DRIVE For PC/AT

- Includes Bracket to Fit PC/AT
- Grey Face Panel
- 360K Formatted DS/DO Drive
- Highly Reliable
- IBM PC/AT Comp.

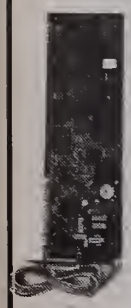
$129.00

TEAC FLOPPY DRIVE

- 360K Formatted DS/DD Drive
- IBM PC/XT Compatible
- Half Height

$109.00

ADDA MODEM



Hayes Compatible with Software	
Competibility:	Bell t03 & 212A
Speed:	0-300 & t200 BPS
Duplex Mode:	Full or Half Duplex
Busy Redial:	Auto Busy Redial
Data Format:	7 or 8 Bit ASCII
Parity Fmt:	Even, Odd or None
Port Adept:	Com1 or Com2

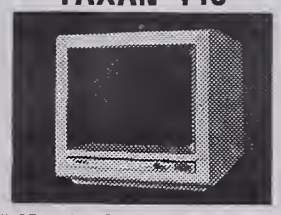
300/1200B **$199.00**

TAXAN 555

- Ultra High Resolution for Color/Graphics
- BOB Compatible
- Resolution for Color Text (720 x 400)
- Resolution for Grapics (640 x 200)
- Use with Taxan 440

$295.00

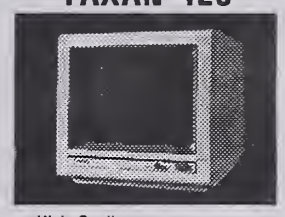
TAXAN 440



- 12" CRT with .31mm Dot Pitch
- Ultra High 720 x 400 Line Resolution
- Includes Cable

$495.00

TAXAN 425



- Taxan High Quality
- 12" Dot In Line 640 x 262 (H x V)
- RGB Input TTL Positive
- Includes Cable

$369.00

TAXAN 121

- 12" Clear Green/Amber Monochrome Screen
- TTL Input
- Includes Cables

$135.00

SUPER COLOR CARD

- Everything IBM Color Card has, and more.
- Two Graphics Modes:
  4 Color - 320 x 200
  1 Color - 640 x 200

$99.00

Monochrome Graphic Card/ Printer Adaptor

- Fully Compatible with IBM PC Monochrome/Printer Adaptor
- Good for IBM Mono Monitor
- Printer Port can be Configured for Centronics or Dataproducts
- Hercules Compatible

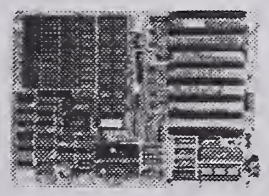
$159.00

135 WATT POWER SUPPLY

- High Speed Fan • Hard Disk Ready
- Same Dimension with IBM PC/XT Power Supply

$99.00

SUPER PC/XT Mother Board



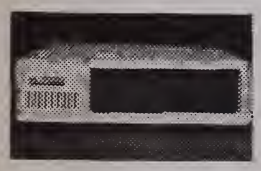
- With 256K On Board, Assembled and Tested
- 8 IBM Compatible Expansion Slots Built In

$325.00

ACCESSORIES FOR IBM PC & COMPATIBLES

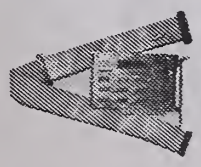
• 4164 Fast RAM Chips (9 ⁵ 64K) Special	$ .99
• 2764-25 EPROM Chips, each	4.00
• INTEL 8087 Math Coprocessor	125.00
• Serial Card Interface	69.00
• Parallel Card Interface	49.00
• Persyst BOB Board	375.00
• Taxan 115 Green Monoitor (Composite)	109.00
• Taxan 116 Amber Monitor (Composite)	119.00
• Taxan 122 Amber Monitor	139.00
• Taxan 420 RG8 Color Monitor	359.00
• Taxan 425 RGB w/Built in Green Switch	369.00
• Taxan TV Tuner (Composite)	79.00
• PC Mouse	CALL
• EPSON FX-80 Printer	355.00
• DYNAX DX-15 Printer	395.00
• ADDA KB-5151 Keyboard (Just like KEYTRONIC KB-5151)	129.00
• Keyboard Extension Cord	10.00
• Printer Cable	15.00

THE STEEL CASE ENCLOSURE



Only **$79**

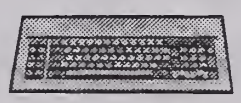
SUPER FLOPPY DRIVE CONTROL



- IBM PC Compatible Drive Controller
- Supports up to four floppy drives

$69.00

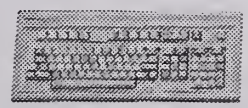
THE KEYBOARD



IBM PC/XT Compatible

$99

ADDA 5151 KEYBOARD



Only **$129**

- Highly reliable & sensible keyboard, w/cap & num indicator. Keytronic KB-5151 look-a-like.

Prompt delivery, usually shipment within 48 hours (except personal check orders). 25% deposit required for C.O.D. orders.
We welcome major educational institutions and PC users' groups to establish open accounts (P/O) status with us to facilitate shipment of orders. Write or call for details.

Prices quoted above do not include UPS shipment charges.
Prices subject to change without notice.
California residents add 6.5% sales tax.

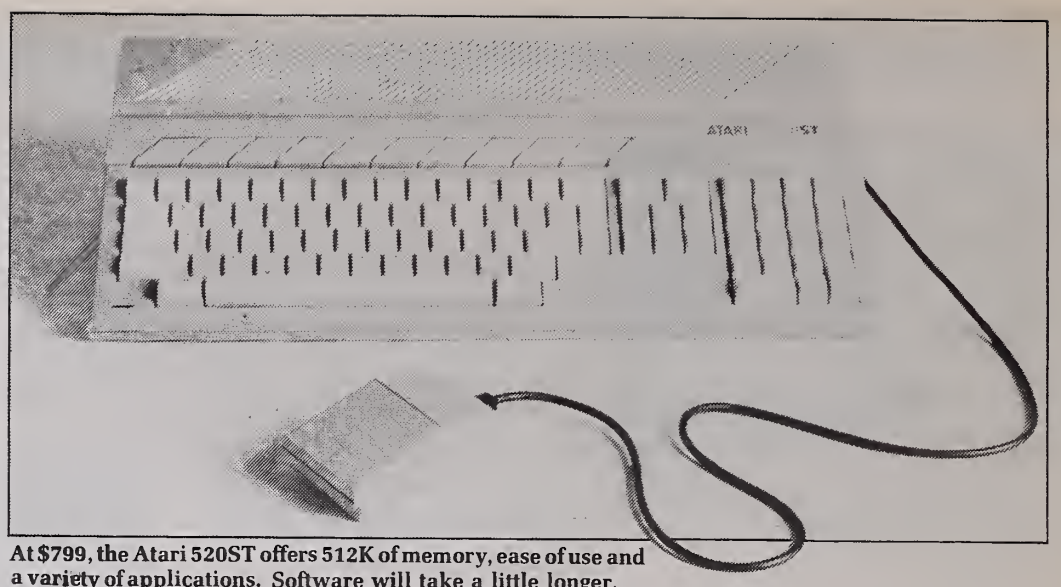
IBM PC is a registered trade mark of IBM Corp.

TAXAN is a registered trade mark of TAXAN Corp.

APPLICATION SOFTWARE CONSULTING SERVICE AVAILABLE

AMERICAN DIGITAL DISCOUNT ASSOCIATION, INC.
4040 SPENCER STREET, SUITE M
TORRANCE, CALIFORNIA 90503
TELEPHONE: (213) 542-3578

The Atari 520ST: First Impressions



At $799, the Atari 520ST offers 512K of memory, ease of use and a variety of applications. Software will take a little longer.

By Mike Fulton

Mike Fulton is a member of the Atari Computer Association of Orange County. Last June Atari user groups were given the opportunity to purchase 520ST systems at a discount, and ACAOC took advantage of the deal. Mike files this report on the new computer's performance.

Based on the MC68000 CPU, the 520ST has 512K of RAM, parallel printer port, RS-232 serial port, built-in floppy and hard disk controllers, MIDI port for music synthesizers, and the GEM desktop from Digital Research, a graphics interface allowing windows and pull-down menus controlled by a mouse. Originally announced as having its operating system in ROM, the 520ST currently loads it from disk, although it will be available on ROM at a later date. GEM is also available for MS-DOS computers, so there should soon be plenty of new software for GEM machines.

For me, one of the 520ST's most important features is the keyboard, with 94 keys, full numerical keypad, cursor control keys, and 10 function keys. The numerical keypad has a large Enter key which duplicates the Return key. The function keys are together in one long row above the rest of the keyboard, nicely out of the way until you need them. The cursor keys are arranged "left-down-right," with "up" right over the "down" key.

The cursor keys can also move the mouse pointer if the Alternate key is held, but it's on the other side of the keyboard, so you have to use both hands to do it. Still, being able to perform the mouse functions from the keyboard will make a lot of users happy.

I really like the feel of the ST's keyboard. The keys provide good tactile feedback. They are neither too mushy or too stiff.

The ST mouse has two buttons, but with its far superior keyboard, programs for the ST probably won't be as mouse-bound as on the Macintosh. Two buttons should make it even more versatile than the Mac's mouse. Remember that you'll need a little extra desk space to roll it around.

The disk drive is the 3.5 inch type. The package came with a single-sided version, which holds 360K per disk. A double-sided version holds 720K. The drive is quiet and fast, compared to those for the 8-bit Ataris. The operating system and GEM desktop accessories use 228,572 bytes on the disk (not every disk, just the one you boot with), but it takes less than 35 seconds to load. Formatting a new disk could be faster at about 50 seconds. With two drives, a disk copy takes about 1.5 minutes.

The display is a 12-inch black and white monochrome monitor with an extremely crisp image. With black letters on a white background, it's almost like looking at a sheet of paper. A cable comes out of the back of the monitor to plug into the computer. There are no other video inputs. I wanted to use it with my Atari 800 and 130XE, but I doubt I'll be able to find a 13-pin socket to make an adapter. Unfortunately, there are no external controls to adjust the picture size, and my monitor has too much overscan. Also, there's no handle or grip to pick it up with.

GEM has all the expected features for manipulating files. The files and folders can be viewed as either icons or as text, and can be sorted by size, type, name, or date. There are different icons for files, programs, or folders. Copying files is done by picking up the icon of the file to copy and dragging it to the destination. Copying a disk is done the same way. Deleting a file is done by dragging it to the trash can icon. You can set whether copy and delete functions need to be confirmed under the Set Preference option.

GEM windows are easy to manipulate. You can control size, move the window to a new location, or even make it take up the full screen if you want. To close a window, you just click the mouse at the box in the upper left corner.

From the Desk menu you can set up the RS-232 port or printer configuration, or use the control panel to adjust the key repeat rate, mouse sensitivity, screen colors, or set the time and date. You can also choose an option called VT52 Emulator. This terminal emulation program lacks features like uploading or downloading, but it's nice to have built-in. There is no calculator, however. Some users will miss this, and I hope it is included in future versions. The accessories are in separate files from the main desktop, so they may be quite easy to expand.

From the Options menu you can set system preferences and defaults, or install new applications. There's even a screen dump to a graphics printer.

Unfortunately, ST BASIC isn't yet ready, so ST LOGO was all I had to play with. It's such a good version of LOGO, the wait for other languages won't be that painful. (ST BASIC will be out by the time you read this.) ST LOGO has every feature of LOGO that I've ever heard of, and a lot of extras. Besides the usual turtle graphics routines, there are procedures for setting different line and fill patterns. There are routines to draw circles, boxes, arcs, ellipses, and more. Graphics screens can be saved or loaded from the disk drive. ST LOGO sports a wide range of list manipulation procedures.

ST LOGO uses separate windows for the graphics, editing, debugging, and main dialog. For debugging, a window can show what procedure is being performed, and the values of its parameters. You can even pause a program while it's running, change part of it, and then continue!

The edit functions in ST LOGO work quite well. Cutting and pasting blocks of text is easy using either the keyboard or the mouse. However, it can only be done at the cursor position, and you can't use the mouse to move the text cursor. Also, marking a block of text doesn't highlight it.

The 520ST manual is nicely done, but I want more. It tells how to hook up the computer and peripherals, and then leads you through the many options of the GEM desktop. It has pinouts for all the ports on the back of the computer. However, there is no memory map of any kind, and I want one!

The ST LOGO manual seems rushed. While the 520 manual is nicely printed, the ST LOGO manual is on stiff white paper and stapled together. It tells little about many of the procedures of ST LOGO. It does explain the menus and windows and tells how to set the various graphics options. The 520ST with ST LOGO could be an extremely attractive package to schools, if the ST LOGO manual is redone.

Digital Research is working on a GEM Write-Paint-Draw-Calc-Graph series. Hopefully, these can do for the ST what *MacWrite* and *MacPaint* did for the Mac. While at Atari, I saw an upcoming drawing program that will blow you away.

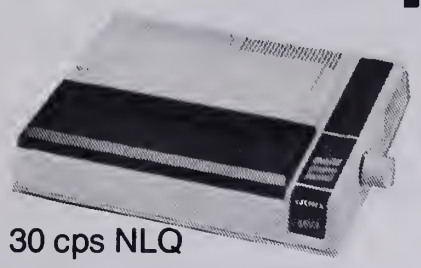
There is a software development package available, with a text editor, telecommunications program, C compiler, 68000 assembler, utilities, and hundreds of pages of documentation, but it costs about $300 — more than I can afford right now. Atari should make this more easily available as soon as possible, making it possible for more people to develop software. The wait for software will be the biggest stumbling block for this machine.

The hardware of the ST gives you more for your dollar than ever before. At $799, you could almost buy three complete ST systems for less than a single 512K Mac. The built-in hard disk interface makes mass-storage easily affordable. The CDROM, an upcoming laser disk storage device, will enable the ST to have almost instant access to databases larger than 500 megabytes. With the RGB color monitor, you have access to 512 different colors, up to 16 of which can be used at a time without any special tricks.

If you don't mind waiting for software, or can write your own, I think the Atari 520ST should be given a good hard look. The ease of use and versatility the GEM interface provides, combined with the speed and power of processors like the 68000, is where the personal computer world is headed, and the ST is one of the first ones there. □

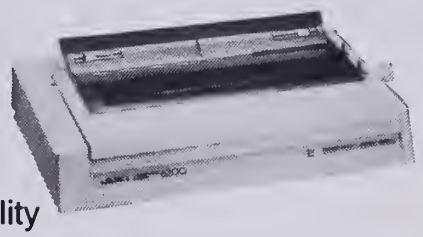
JUKI® Quality and Performance You Can Depend On

New Model 5510



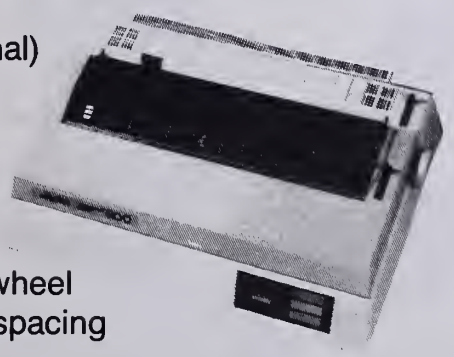
- 180 cps Matrix (9-Pin) 30 cps NLQ
- 9-inch platen
- Bi-directional
- Prints graphics; word processing features
- IBM™/Epson compatible (switch-changeable)
- 3K buffer, expandable to 15K
- 7-color printing capability (optional)

New Model 6200



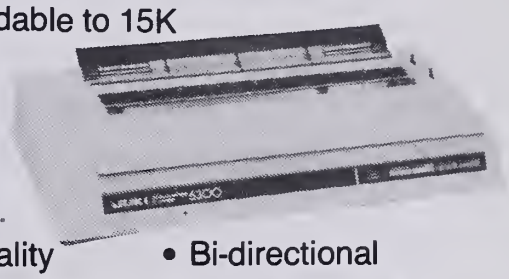
- 30 cps Letter Quality
- Diablo™ compatible daisywheel
- Bi-directional • 16-inch platen
- 10/12/15 pitch and proportional spacing
- Less than 58 dB (A) noise level
- 3K buffer, expandable to 15K

Model 6100



- 18 cps Letter Quality
- Triumph-Adler™ compatible daisywheel
- 10/12/15 pitch and proportional spacing
- 13-inch platen
- Word processing functions; graphics capabilities
- 2K buffer, expandable to 8K

Model 6300



- 40 cps Letter Quality • Bi-directional
- Diablo™ compatible daisywheel • 16-inch platen
- 10/12/15 pitch and proportional spacing
- Word processing and graphics capabilities
- Less than 60dB (A) noise level
- 3K buffer, expandable to 15K

SUGGESTED LIST PRICES FOR JUKI® PRINTERS AND OPTIONS

DESCRIPTION	PRICE
Model 5510 Parallel Printer (Dot Matrix)	**$499.00**
Model 5510 Serial Printer (Dot Matrix)	**582.00**
Mono Ribbon Cartridge	8.95
Color Ribbon Cartridge	14.95
Color Conversion Kit	149.00
RS-232 Serial Interface	83.00
Model 6100 Parallel Printer (Daisywheel)	**$599.00**
Model 6100 Serial Printer (Daisywheel)	**658.00**
RS-232C Serial Interface	59.00
Bi-Directional Tractor	149.00
Single-Bin Cut-Sheet Feeder	249.00
Daisywheel	20.00
Single-Strike Ribbon	3.50
Multi-Strike Ribbon	6.00
Macintosh Printer Driver (Disk only)	75.00
Macintosh Printer Driver (Disk and Cable)	95.00
Model 6300 Printer (Daisywheel)	**$995.00**
Bi-Directional Tractor	159.00
Single-Bin Cut-Sheet Feeder	275.00
Dual-Bin Cut-Sheet Feeder	495.00
Daisywheel	8.00
Multi-Strike Ribbon	5.20
Fabric Ribbon	7.50
Macintosh Printer Driver (Disk only)	75.00
Mactintosh Printer Driver (Disk and Cable)	95.00
Model 6200 Parallel Printer (Daisywheel)	**$745.00**
Model 6200 Serial Printer (Daisywheel)	**804.00**
Bi-Directional Tractor	159.00
Single-Bin Cut-Sheet Feeder	275.00
Dual-Bin Cut-Sheet Feeder	495.00
Daisywheel	8.00
Multi-Strike Ribbon	5.20
Fabric Ribbon	7.50
RS-232 Serial Interface	59.00
Model 6000 Printer (Daisywheel)	**$295.00**
Commodore Converter (for parallel only)	49.95
Daisywheel	17.00
Single-Strike Ribbon	3.75
Fabric Ribbon	7.00

Also available: Model 6000—10 cps, Letter Quality, 2K Buffer
All JUKI Printers Come With A Full One-Year Warranty

Charp Distributing (415) 349-0992

15 Crippleridge Court, San Mateo, CA 94402

LEE FELSENSTEIN:

Building The Electronic Neighborhood

By Vanessa Schnatmeier

Can a computer become the center of a happy neighborhood? Can computers help us create an open and decentralized society, where we will not be stamped, pushed, filed, indexed, briefed, debriefed or numbered? You'll see these questions debated endlessly, but only a very few people attempt to *build* their vision of a "user friendly" computer-aided society.

Computer designer and hacker Lee Felsenstein and the other members of an organization called Community Memory are building, terminal by terminal, an electronic open forum that could serve as everything from a classified ad mart to a soapbox to a tool for political organizing.

Community Memory terminals, currently located at the Whole Earth Access Store, Cafe Violeta at La Peña, and the Telegraph Avenue Co-op, all in Berkeley, offer completely free and uncensored electronic "speech." The terminals cost nothing to use right now, though Community Memory plans to make them self-supporting soon, by means of coinboxes.

The dream of the organization is that these terminals will become the seeds of neighborhoods, the equivalent of the beauty shop or the local bar, where gossip is exchanged and people make the decisions that really affect them close to home. (Coincidentally, the group is now searching for a new neighborhood for itself where it can find better rent prices and foot traffic.)

Felsenstein, one of Community Memory's founders, calls himself a "daydreamer." But few daydreamers can point to such substantial, concrete credentials. He's probably best known outside Berkeley as the designer of the Osborne computer. As a pioneering hacker, in 1975 he designed one of the first personal computers, the Sol from Processor Technology, and later a video display module and a modem. But he's put his heart and intelligence into developing the ideals of Community Memory, donating time and no small amount of money from his firm, Golemics, to keep the project going.

Photos: Matthew Leeds

Pioneer hacker, designer of the Osborne 1, and advocate of free access to information, Lee Felsenstein discusses Community Memory, the electronic age's answer to the corner grocery store, the Hacker's Mac, and other topics.

In a recent interview, Felsenstein discussed his philosophy of design, his hopes and plans for Community Memory, the ways Community Memory-like associations could increase our quality of living, and his ideas for a public-domain "Hacker's Mac" computer and a new method of interacting with computers.

What is Community Memory trying to do right now?

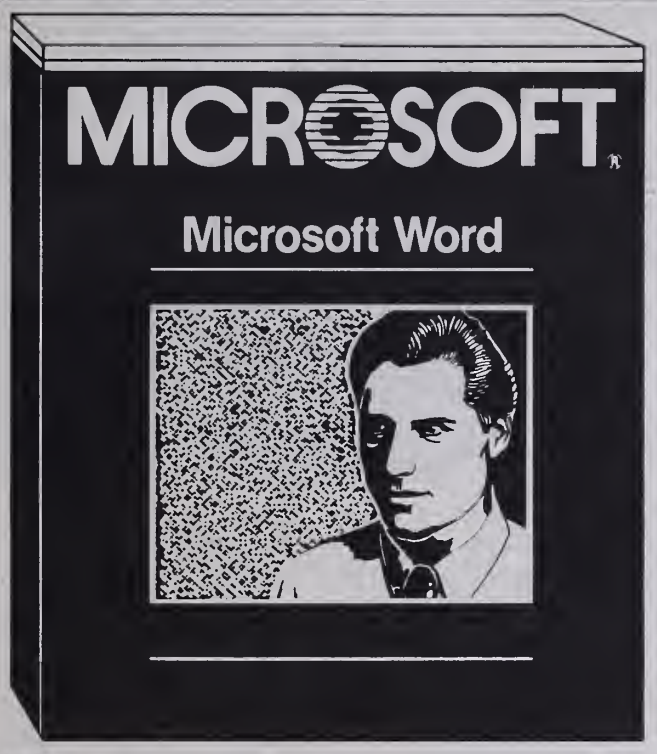
The general direction is that we want to get people outside of the Community Memory project interested enough in establishing Community Memory systems so that they can form associations that will then own and operate their own systems.

We have to do a lot more analysis about exactly how we're going to carry out that organizing. Right now we've been just recovering from giving birth to that first system. What we should be doing is to have training sessions regularly at the terminals...We could also be doing meeting with community organizations who should be using the system — to develop a working relationship and get somebody from there to take a little time and learn things on the terminal at the Community Memory office. We want to get those organizations into using the system as an information channel.

The other thing we have to do, from a technical standpoint, is the coinbox — I'm sitting right here on the documentation for the public terminal adapter (he shows exploded pen-drawings on green paper of a terminal and where a coin box would fit on the standard Community Memory terminal).

That's what most of these sketches are about, an assembly that fits inside there which will hold the quarter or nickel or dime, and will drop it out

Manager's MICROSOFT®
Summer Specials



- Design documents right on the screen.
- Use windows to move and copy text between documents easily.
- Edit and format text quickly and easily using the mouse or short keystroke commands.
- Use the latest in printer technology.
- Get up to speed fast with computer-assisted tutorial.

List $375 **Micro Flash Special Price**

$228

No Risk 30-Day Money Back Guarantee:
Try Microsoft Word at absolutely no risk. Buy it and try it for 30 days. If you are not completely satisfied return it for a full refund.

MAC BUSINESS PACK
Contains all of these packages.

BUILD HIGH PERFORMANCE CUSTOM SPREADSHEETS FAST WITH MICROSOFT® MULTIPLAN®.

PRODUCE PROFESSIONAL-QUALITY DOCUMENTS

MICROSOFT® FILE

MAKE YOUR POINT GRAPHICALLY WITH MICROSOFT® CHART FOR IBM® PCs.

Micro Flash Special Price

List $595 **$365**

Microsoft Ala Carte

	MS/DOS	Macintosh
Access	$199	
Basic Interpreter	227	$ 99
Chart	150	89
File		119
MacLibrary		
Logo		81
Entrepreneur		33
Multiplan/Chart Tutorial		40
Multiplan	119	119
Word	228	119

MICROSOFT® MACENHANCER™ EXPANSION SYSTEM.

- Add one parallel port and two serial ports
- Print documents on various printers.
- Communicate with other PCs.

Manager's Special Price

List $249 **$180**

GAIN CONTROL OVER YOUR DEADLINES WITH MICROSOFT® PROJECT.

- Assess the impact of scheduling changes.
- Monitor project cash flow easily by building a table of resource costs.
- Set schedule in a row-and-column format.

Manager'Special Price

List $250 **$155**

VISA

MasterCard

AMERICAN EXPRESS

1110 Burnett Avenue
Concord
CA 94520

MICRO Flash™
COMPUTER SYSTEMS, INC.

(415) 680-1157

Micro Flash Terms: Purchase Orders accepted after credit approval. $100 minimum order. $6.00 shipping charge for UPS surface. Printers, plotters and monitors higher. Add $3.00 for UPS 2nd day air. Call for information on CODs, US mail, or foreign orders

Member: Better Business Bureau, Chamber of Commerce Listed: Dun & Bradstreet

Capitalism is very good at creating junk out of what were once valuable, rare things. I, from my technical perspective, know the junk still works. The Osborne computer still works, in part because the user groups continued to support it.

or down depending on a command from a microprocessor that's going to be in the base of the terminal.

I would like to be able to have it run where you put in a quarter, and it holds the quarter, and you get a certain number of minutes of finding or non-adding activity. And then it'll warn you that it's going to drop the coin, and it drops the coin and it freezes where you are. You've used it for free up to that point.

How much are you thinking of charging?

We did some spreadsheets and figured that for a system with, let's say, 15 terminals in revenue service, running about 16 hours a day and in service some percentage of the time, that the system can buy itself again in two or three years and cover the cost of maintenance, which is one and a half full-time salaries at a fairly low rate, like $20,000, and the incidental expenses, like telephone line rentals and things like that. That's a rate of about 5 cents per terminal minute. That's cheaper than a lot of things. Maybe the last thing you can get for a nickel.

When do you hope to have this actually functioning?

I hoped you wouldn't ask that... but obviously you were going to. I've given up making statements about when we're going to have the coin-box functioning. We'll say that it's a von Neumann constant of 90 days — that means 90 days from whenever the last time is that you asked...But you see, what I should do here is make it a real formal project of Golemics, in effect fund it in Golemics.

This is a good point to find out exactly what Golemics' purpose is.

Golemics is a corporation whose purpose nominally is to make money. But Golemics is a research and development organization. Yes, we're going to make money, and we're going to make it in a couple of ways. We've been doing contract engineering, which is not a whole lot of fun; you're always doing something to someone else's specifications, and you're subject to the winds of change in the industry.

Golemics is an extension of what I was doing myself in 1974 and 1975, which is designing things and ideally licensing them to be manufactured. I had some successes that way, in terms of the video display module, the Sol computer. The Osborne did not go into that, because that was done under the corporate heading and it was not done under a royalty arrangement. I want to get back to the royalty situation. That's the closest thing to free money that I've yet found. So we're going to be originating some products here in house, and licensing them out to manufacturing.

You were thinking of Community Memory as a tool for the development and the redevelopment of communities. Do you think it's really doing that, and what kind of community is developing around Community Memory?

I don't think it's doing it just yet, therefore I don't feel there is a community developing around it. I may be wrong...A community is a group of people who communicate on a regular basis. I do not know if enough people are using it in that sense to cross that fuzzy boundary line and quality.

What would you need to do?

Well, we're back to the organizing and the publicizing and telling people what they can do with it — training people. And also getting information gatekeepers together, somebody who becomes an authority in a certain area of information. Information freaks are always culling through the database, finding out what's going on. It's sort of a space they live in; they're the intelligent being that you find in there, although it's just some human using another terminal.

A system guru?

Well, no. There's a potentially unlimited number of them. If everyone was one it wouldn't make any sense, because nobody would be using it. But essentially information freaks are people with one particular interest; instead of your going to the terminal and going through a masterful search for something or other, it might be more convenient for you to call them up and say, "You know what I'm interested in; what have you seen today that's interesting?" And they'd say, look under this, look under that, look under that. And then you'd pay them something for that service.

Sounds like you want it even more decentralized than it is.

Oh yes, yes. The level of decentralization just has to be continually developed. The Community Memory project per se will wind up running the protocols for the network of Community Memory nodes, the agreements under which they each operate and interact; the nodes will be owned and operated by the associations, which should be definitely community based groups, not outside companies, for instance. Chevron sponsoring it, we don't want that. But that will run as a kind of neighborhood utility. And the information gatekeepers will come and go, as the community grows, and comes and goes, and changes.

If you could call in [via modem], so could the government, so could any number of hackers and so forth. The problem then becomes, who has the biggest and fastest computer at the other end of the line, because then they can dribble information out without having to go through a human mind. That's the "Rust Never Sleeps" argument.

Would you want to have, for instance, agents from the IRS turning up on your doorstep the day after you've advertised something for sale, ready to sell you a tax stamp on it? There aren't any tax stamps on that stuff, but there would be if they could.

There will come a time, I'm sure, when the IRS decides in its grandeur that it is entitled to bulk dumps from CM, all nicely sorted, and we won't provide them, period. We can't pre-

Berkeley's Community Memory

Community Memory is, as the group's president Carl Farrington puts it, "a cross between Berkeley politics and Silicon Valley technology." This unmediated information exchange lets anyone walk in off the Berkeley street and access one of several terminals, to leave or read messages about absolutely anything.

It's similar to some electronic bulletin boards in that a wide range of subjects are discussed (and no messages are censored), but unlike most bulletin boards, you can't call in via modem. You have to go to the neighborhood of one of the terminals (Whole Earth Access Store, Cafe Violeta, or the Telegraph Avenue Co-op) and use it there.

The Community Memory network is at once a centralizing and a decentralizing force. It was designed to serve as a nucleus for communities, an information source and, eventually, a hangout for people in the same neighborhood — but the designers of Community Memory hope the users will also wield the system as a tool to step out from under various kinds of central control.

For more information on Community Memory, contact the group at 916 Parker, Berkeley, CA 94710, or call (415) 841-1114.

— Vanessa Schnatmeier

FOR FAIRE PRICES ON MORE PRODUCTS

415/680-1157

PC

PC HARDWARE	Retail Price	Micro Flash
COMMUNICATIONS & EMULATION BOARDS		
DCA		
IRMA for PC & XT	1195	857
Techland		
3276 w/Keyboard	945	870
COMPUTERS		
AT&T		CALL
Zenith		CALL
GRAPHICS CARDS		
AST		
Monograph Plus	499	330
Hercules		
Graphics Card	499	295
Color Card	245	150
Paradise Systems		
Multi Display Card	459	275
Modular Graphics Card	395	264
STB		
Graphics Plus II	495	345
Tecmar		
Graphics Master	695	469
MASS STORAGE SYSTEMS		
Alloy		
Stor 36MB for AT&T	4295	3261
Iomega		
Bernoulli 10/10 20MB	3695	2599
I-²		
33MB External	2295	1432
10MB/10MB Tape B.U.	1595	1145
MSI		
MT25, 25MB Tape B.U.	1050	853
Priam		
42MB Internal AT/XT	2195	1755
Sysgen		
Sysgen II G-20	3995	2938
Quic-File 45 Int. AT	1395	1058
Quic-File 45 Ext.	1495	1115
Image 10MB Tape B.U.	995	805
Tallgrass Technologies		
25MB/60MB Tape B.U.	3495	2815
80MB/60MB Tape B.U.	7495	6260
MEMORY EXPANSION CHIPS		
64K RAM Set of 9		19
256K RAM Set of 9		69
MODEMS		
AST		
Reach 1/2 Card 1200	549	395
2400 Baud Sync	795	716
Anchor		
Mark XII	399	240
Hayes		
Smartmodem 1200	599	449
Smartmodem 2400	899	655
Prentice		
Popcom X 100 External	475	380
U.S. Robotics		
Courier 2400	699	490
MONITORS		
AMDEK		
Amber 310A	230	159
Color 500 RGB	450	335
Color 600 RGB	599	430
Color 710 RGB	799	540
PGS		
Max 12 Amber	249	179
HX 12 RGB	695	466
MULTIFUNCTION CARDS		
AST		
MegaPlus II 64K	395	265
SixPakPlus 64K w/Sidekick	395	265
Intel		
Above Board 64K	395	295
Orchid Technology		
Blossom "0"K, C,S,P	295	190
PC Turbo 186 w/128K	895	587
Quadram		
Quadboard "0"K	325	230

Micro Flash Terms: Purchase Orders accepted after credit approval. $100 minimum order. $6.00 shipping charge for UPS surface. Printers, plotters and monitors higher. Add $3.00 for UPS 2nd day air. Call for information on CODs, US mail, or foreign orders.

PLOTTERS	Retail Price	Micro Flash
Houston Instruments		
DMP 29	2295	1790
DMP 51 or DMP 52	5995	4676
DMP 695	695	540
DT-114 Digitizer	810	720
Roland		
DXY 880	1295	970
Nicolet Zeta		
Zeta 824		CALL
PRINTERS		
Citizen		
MSP 10 160 CPS	449	329
MSP 15 160 CPS	649	489
Diablo		
630 API	2095	1704
150 Inkjet	1295	1025
Epson		
LX-80	299	230
FX-80^{5}	499	355
FX-100^{5}	699	498
JX-80 Color	699	498
LQ 1500	1295	918
JUKI		
6300	995	750
Okidata		
Microline 192 IBM	499	385
Microline 193 IBM	699	545
Microline 84P	899	710
NEC		
Elf 360, S/W & Cable	595	468
3550 Spinwriter	1440	1030
Qume		
Sprint 1140	1681	1379
Sprint 1155	1895	1565
Toshiba		
1340	799	619
1351	1895	1345
351 Par./Ser.	1945	1375
TERMINALS		
Kimtron		
KT-7PC 12 inch	895	769
KT-7ASCII 14 inch	945	819
Wyse		
WY-50	599	485
WY-75	799	650
Televideo		
910	699	619
925	995	799
Qume		
102 Green	595	460
102 Amber	610	477
MISCELLANEOUS		
Computer Acccessories		
Power Director P-12	199	135
Microsoft®		
Serial Mouse w/Paint Brush	195	135
Mouse Systems		
Mouse	220	158
Tripp-Lite		
Power Backup	559	454
Isobar 4	89	62

PC SOFTWARE

ACCOUNTING	Retail Price	Micro Flash
BPI		
General Accounting	595	277
Sorcim/IUS		
General Ledger	595	336
COMMUNICATIONS		
Hayes		
Smartcom II	149	93
Menlo Corporation		
In-Search	495	350
Microstuff		
Crosstalk XVI	195	100
Microsoft®		
Access ™	250	199

- We welcome corporate accounts
- We give quantity discounts
- We accept VISA, MasterCard & American Express
- We gladly provide professional technical support for products sold.

Ask about our
365 DAY WARRANTY

DATABASES & INTEGRATED	Retail Price	Micro Flash
Analytica Corp.		
Reflex	495	CALL
Ashton-Tate		
dBase III	695	374
Framework	695	374
Cosmos		
Revelation	950	720
Innovative Software		
Smartware System	895	495
Microrim		
R:Base 5000	700	425
Software Publishing		
PFS:File	140	99
PFS:Report	125	88
GRAPHICS		
BPS		
Business Graphs	350	255
Graphic Communications		
Graphicwriter	395	279
Microsoft®		
Chart	250	155
Windows		CALL
Software Publishing		
PFS:Graph	140	99
LANGUAGES		
Borland		
Turbo Pascal 3.0	70	49
Turbo Pascal w/8087	95	69
Digital Research		
C Compiler 3.0	350	220
Microsoft®		
FORTRAN Compiler	350	230
C Compiler	395	276
Nantucket		
The Clipper Compiler	695	529
SCHEDULING		
Breakthrough Software		
Time Line	395	287
Harvard Software		
Total Project Manager	495	309
Microsoft®		
Project	250	155
Software Publishing		
PFS:Plan	140	99
SPREADSHEETS		
Innovative Software		
Smart Spread Sheet	495	325
Microsoft®		
Multiplan ™	195	119
Sorcim/IUS		
Supercalc 3	395	196
UTILITIES		
Borland		
SideKick Protected	55	35
SideKick Unprotected	85	48
SuperKey	70	45
Bourbaki		
"1 Dir"	95	60
Digital Research		
GEM Desktop	50	35
Funk Software		
Sideways	60	35
WORDPROCESSING		
Innovative Software		
Word Processor	395	250
Lifetree		
Volkswriter Deluxe	295	167
Living Videotext		
Think Tank	195	98
Micropro		
Wordstar 2000	495	259
Microsoft®		
Word with Spell	375	228
Multimate International		
Multimate	495	CALL
Samna		
Word III	550	276
SSI		
WordPerfect	495	227
Software Publishing		
PFS:Write	140	99

FREE
w/ $500+ ORDER
"A Much Much Better World"
Published by Microsoft® Press

MACINTOSH

MAC HARDWARE	Retail Price	Micro Flash
Assimilation		
Mac Turbo Touch	129	105
AST		
RamStak XL 2MB	2695	1250
Hayes		
Smartmodem 1200	599	449
IOMEGA		
Bernoulli Box 5MB	1895	1366
Koala		
MacVision	400	239
Microsoft®		
MacEnhancer ™	249	199
Mousetrak		
Mousepad	13	10
Prometheus		
ProModem M	549	359
Sony		
3.5" Diskettes Box 10	60	37
Thunderware		
Thunderscan	229	219
MAC SOFTWARE		
Arrays		
Home Accountant	100	69
CSD		
MacLion	375	249
Dow Jones		
Straight Talk	79	54
1st Byte		
Smooth Talker	149	119
Haba		
Quartet	200	139
Hayden		
Ensemble	300	189
MusicWorks	80	59
SAT	100	74
Hayes		
Smartcom II/Mac	149	119
Human Edge		
Management Edge	250	169
Infocom		
Hitchhkr's Guide	40	29
Living Videotext		
Think Tank 512	245	139
Microsoft®		
Basic Interpreter	150	99
Business Pack	595	399
Chart	125	89
EXCEL ™	395	CALL
File	195	119
MacLibraries ™		CALL
Multiplan ™	195	119
Word	195	119
Monogram		
Dollars and $ense	150	98
Odesta		
Helix	395	249
Paladin		
Crunch	295	209
ProVue		
OverVUE	295	179
Software Publishing		
PFS:File & Report	195	129
T/Maker		
ClickArt	50	39
Telos		
Filevision	195	109
Videx		
MacVegas	59	35

Member: Better Business Bureau, Chamber of Commerce Listed: Dunn & Bradstreet

MICRO Flash
COMPUTER SYSTEMS, INC.
1110 BURNETT AVENUE
CONCORD, CA 94520

UPGRADE YOUR IBM-PC

10 MB hard disk system **$489.00**

20 MB hard disk system **$659**

- lower power drain,
- same current IBM floppy disk drive
- 1 year warranty
- includes controller board and cable

AMQUTE III PORTABLE

- Communication Interface
  IBM PC compatible
  RS-232-C serial I/0 port
- Printer Interface
  IBM PC compatible parallel printer port
- Video Interface
  IBM PC compatible RGC color monitor port
- Expansion Slots
  Four available slots, three have external access capability
- Power Supply
  120-volt, AC, 60Hz. DC power supply delivers 120 watts, or twice as much as main system needs, therefore, runs cooler than most other systems during normal operation

512k/1floppy/10 MB
with 3 MB expansion slots

10MB SALE **$2545**

20MB SALE **$3145**

COMPAQ DESKPRO SPECIALS

PACKAGE 1
256K; 2 DRIVES;
DOS 2.11;
W/MONO $2289;
COLOR $2449

PACKAGE 2
256K; 2 DRIVES;
10MB; DOS 2.11;
W/MONO $2849;
W/COLOR $2999

PACKAGE 3
256K; 2 DRIVES;
20MB; DOS 2.11;
W/MONO $3049;
W/COLOR $3199

FOR 640K SYSTEMS ADD $99

ANDREW TOBIAS

"Limited Supply"
MANAGING YOUR MONEY™
- Home budget
- Taxes
- Prints checks!

meca
MICRO EDUCATION CORPORATION OF AMERICA

$99

IBM PC
64K
ONLY $1295

WITH THESE P
MAKE HISTOR

PACKAGE **1**

IBM PC 640K COLOR COMMUNICATIONS SYSTEM

- IBM 256K, 2 360K DS/DD FLOPPIES, KEYBOARD
- DOS 2.1
- CHOICE OF TAXAN 420, PGS HX-12, OR AMDEK 600 HIGH RESOLUTION RGB COLOR MONITORS
- COLOR GRAPHICS ADAPTER
- MULTIFUNCTION BOARD WITH PARALLEL PRINTER PORT, SERIAL PORT, GAME PORT, CLOCK/CALENDAR, RAM DISK, PRINT SPOOLER, AND 384K RAM TO UPGRADE ENTIRE SYSTEM TO 640K TOTAL MEMORY
- CHOICE OF FRAMEWORK INTEGRATED SOFTWARE OR DBASE III DATABASE MANAGEMENT SYSTEM
- CHOICE OF OKIDATA 92 DOT-MATRIX GRAPHICS PRINTER OR STAR MICRONICS SD-10 LETTER-QUALITY PRINTER
- PRINTER CABLE
- 1200-BAUD INTERNAL MODEM WITH INTELLISOFT COMMUNICATIONS SOFTWARE
- COPY II PC V2.4 (SOFTWARE UTILITY TO BACK-UP ALL COPY-PROTECTED SOFTWARE TO A FLOPPY DISK)
- MONITOR TILT/SWIVEL BASE
- SURGE SUPPRESSOR & NOISE FILTER

ONLY $3,399.00 OR $105.00/MONTH

PACKAGE **2**

IBM PC 640K/10MB HARD DISK COLOR COMMUNICATIONS SYSTEM

EXACT SAME SYSTEM AS PACKAGE #1, BUT WITH ADDITION OF 10-MEGABYTE INTERNAL HARD DISK.

ONLY $3,839.00 OR $118.00/MONTH
(ADD $250.00 OR $8.00/MONTH FOR 20 MB)

PACKAGE **3**

IBM PC 320K COLOR COMMUNICATIONS SYSTEM

- IBM PC 256K, 2 360K DS/DD DRIVES, KEYBOARD
- CHOICE OF TAXAN 420, AMDEK 600, OR PGS HX-12 RGB COLOR MONITORS
- DOS 2.1
- COLOR GRAPHICS ADAPTER
- INTUIT INTEGRATED SOFTWARE
- CHOICE OF OKIDATA 92P DOT-MATRIX GRAPHICS PRINTER OR STAR MICRONICS SD-10 LETTER-QUALITY PRINTER
- PRINTER CABLE
- 1200-BAUD INTERNAL MODEM WITH COMMUNICATIONS SOFTWARE
- COPY II PC V2.4 (SOFTWARE UTILITY TO BACK-UP COPY-PROTECTED SOFTWARE)
- MONITOR TILT/SWIVEL BASE
- SURGE SUPPRESSOR & NOISE FILTER

ONLY $2,869.00 OR $88.00/MONTH

ADD $
CHASSIS

STORE HOURS
MON.-FRI. 10:00 to 7:30
SATURDAYS 11:00 to 5:00

(415) 591-1663
ext. 303

sci tech SYSTEMS INC

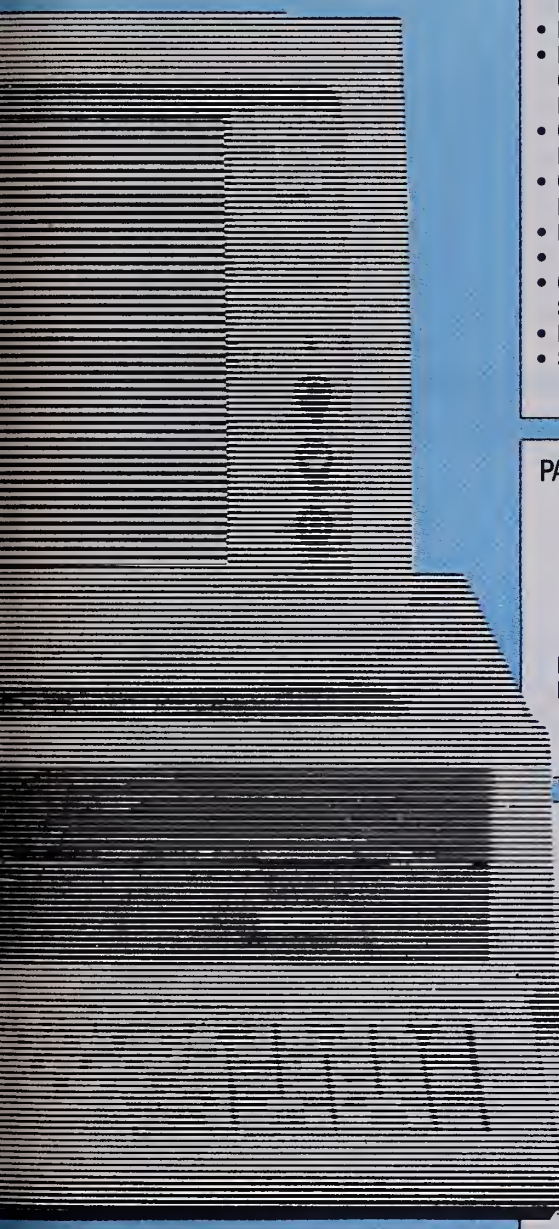
SCI/TECH

"DETERMINED TO BE B

1501 EL CAMINO REAL BELMONT, CA 94002

ICES, WE WILL
Y IN AMERICA!

IBM PC/XT
256K
ONLY $1679



PACKAGE

4 IBM PC 640K MONOCHROME COMMUNICATIONS SYSTEM

- IBM PC 256K, 2 360K DS/DD FLOPPIES, KEYBOARD
- DOS 2.1
- CHOICE OF AMDEK 310A, PGS MAX-12, OR TAXAN 122 HIGH RESOLUTION MONOCHROME MONITORS
- MONOCHROME/COLOR GRAPHICS ADAPTER
- MULTIFUNCTION BOARD WITH PARALLEL PRINTER PORT, SERIAL PORT, GAME PORT, CLOCK/CALENDAR, RAM DISK, PRINT SPOOLER, AND 320K RAM TO UPGRADE ENTIRE SYSTEM TO 640K TOTAL MEMORY
- CHOICE OF FRAMEWORK INTEGRATED SOFTWARE OR DBASE III DATABASE MANAGEMENT SYSTEM
- CHOICE OF OKIDATA 92P DOT-MATRIX GRAPHICS PRINTER OR STAR MICRONICS SD-10 LETTER-QUALITY PRINTER
- PRINTER CABLE
- 1200-BAUD INTERNAL MODEM WITH COMMUNICATIONS SOFTWARE
- COPY II PC V2.4 (SOFTWARE UTILITY TO BACK-UP COPY-PROTECTED SOFTWARE)
- MONITOR TILT/SWIVEL BASE
- SURGE PROTECTOR & NOISE FILTER

ONLY $3,179.00 OR $98.00/MONTH

PACKAGE

5 IBM PC 640K/10MB HARD DISK MONOCHROME COMMUNICATIONS SYSTEM

EXACT SAME SYSTEM AS PACKAGE #2, EXCEPT WITH 10-MEGABYTE INTERNAL HARD DISK.

ONLY $3,699.00 or $114.00/MONTH
(ADD $250.00 or $8.00/MONTH FOR 20 MB)

PACKAGE

6 IBM PC 320K MONOCHROME COMMUNICATIONS SYSTEM

- IBM PC 256K, 2 360K DS/DD FLOPPIES, KEYBOARD
- CHOICE OF AMDEK 310A, TAXAN 122, OR PGS MAX-12 HIGH-RESOLUTION MONOCHROME MONITORS
- MONOCHROME ADAPTER
- INTUIT INTEGRATED SOFTWARE
- SURGE PROTECTOR & NOISE FILTER
- MONITOR TILT/ SWIVEL BASE
- PRINTER CABLE
- DOS 2.1
- CHOICE OF OKIDATA 92P DOT-MATRIX GRAPHICS PRINTER OR STAR MICRONICS SD-10 LETTER-QUALITY PRINTER
- 1200-BAUD INTERNAL MODEM WITH COMMUNICATIONS SOFTWARE
- COPY II PC V2.4 (SOFTWARE UTILITY TO BACK-UP COPY-PROTECTED SOFTWARE)

ONLY $2,649.00 OR $82.00/MONTH

FOR XT
SPECIALS

AMDEK PRODUCTS

310A
List $249
SALE $139

THE AMDEK VIDEO 310A

The IBM-Compatible Monochrome Monitor. . . Designed for Business and Educational Applications with the IBM-PC, XT and AT

600
List $695
SALE $379
2 FULL YEAR WARRANTY

THE AMDEK COLOR 600

The High Resolution Color Monitor. . . Designed for Business, Educational and Home Applications

NEW PRODUCTS

STB CHAUFFER MONOCHROME BOARD

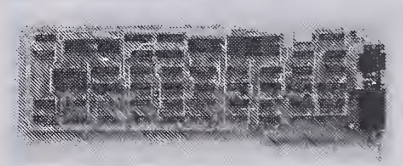
- DISPLAYS COLOR GRAPHICS ON YOUR MONOCHROME MONITOR WITHOUT ANY SOFTWARE OR DRIVERS
- PARALLEL PRINTER PORT LPT 1 OR LPT 2 SELECTABLE
- CLOCK CALENDAR OPTION

$289 W/CLOCK $319

TALL TREE SYSTEMS
MEMORY ENHANCEMENT CARDS

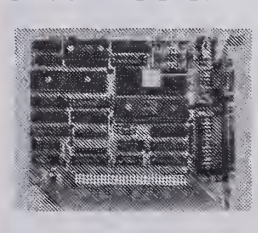
JRAM 2 W/2MB MEMORY INSTALLED	$449
JRAM 3 W/2MB MEMORY INSTALLED	$549
JRAM AT W/2MB MEMORY INSTALLED	$549

ORCHID PC TURBO 186
W/640K RAM INSTALLED
$795
ALLOWS YOU TO BRING "AT" PERFORMANCE
TO YOUR IBM PC, XT, OR COMPATIBLE



LIST $499
SALE
$149

HERCULES MONOCHROME GRAPHICS CARD



HERCULES COLOR CARD
LIST $245
SALE **$149**

CREDIT AVAILABLE FOR APPROVED CORPORATE ACCOUNTS. INQUIRIES WELCOMED.

OMPUTER STORES

— DESTINED TO BE FIRST"

WE WILL TRY TO BEAT ANY ADVERTISED PRICE FOR ANY COMPUTER SYSTEM, ACCESSORY, OR PERIPHERAL FROM ANY DEALER IN THE WHOLE UNITED STATES!!! AND WE WILL MOST PROBABLY SUCCEED!!!

TERMS:
1. ALL PRICES REFLECT A CASH OISCOUNT OF 3%.
2. AOO 3% FOR VISA OR MASTERCARO.
3. FOR MAIL ORDER, ADD $15.00 FOR COMPUTERS, $10.00 FOR MONITORS, PRINTERS, ANO HARD DISKS. OTHERWISE, ADO ONLY $5.00 PER ITEM!
4. CASHIER'S CHECKS ONLY FOR MAIL ORDER, REGARDLESS OF AMOUNT.
5. ADD 3% TO TOTAL AMOUNT FOR ALL COO ORDERS.
6. ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE.
7. CALL FOR CURRENT PRICES. THEY MAY HAVE JUST OECREASED!!!

WE BEAT EVERYBODY. PERIOD!

IF THESE PRICES DON'T BLOW THE COMPETITION AWAY, NOTHING ELSE WILL!!!!

COMPUTERS

COMPAQ PORTABLE 256K/2 DRIVES	$1995.
COMPAQ PORTABLE 256K/1 FLOPPY/10MB HD	$2995.
AMQUTE I PORTABLE 256K/1 DRIVE	$1495.
AMQUTE II PORTABLE 256K/2 DRIVES	$1595.
AMQUTE III PORTABLE 256K/1 FLOPPY/10MB	$2395.
AMQUTE IV PORTABLE 512K/1 FLOPPY/20MB	$2995.
SANYO 775 RGB PORTABLE 256K/2 DRIVES	$1895.

SANYO 555-2 PACKAGE SPECIAL
256K RAM, 2 DS/DD 360K DRIVES, 1 AMBER MONITOR, DOS 2.11, GW BASIC, WORDSTAR, CALCSTAR, EASY-WRITER, JUKI 6000 DAISY-WHEEL PRINTER W/ CABLE
ONLY $1295.00

IBM PC 256K/2 FLOPPIES	$1489.
IBM PC 256K/1 FLOPPY/10MB HARD DISK	$1909.
IBM PC 256K/2 FLOPPIES/10MB HARD DISK	$1989.
IBM PC 256K/1 FLOPPY/20MB HARD DISK	$2179.
IBM PC 256K/2 FLOPPIES/20MB HARD DISK	$2269.
IBM XT 256K/2 FLOPPIES	$1899.
IBM XT 256K/1 FLOPPY/10MB HARD DISK	$2299.
IBM XT 256K/2 FLOPPIES/10MB HARD DISK	$2399.
IBM XT 256K/1 FLOPPY/20MB HARD DISK	$2499.
IBM XT 256K/2 FLOPPIES/20MB HARD DISK	$2599.
IBM A/T (ENHANCED VERSION)	$CALL.
WYSE PC 256K/2 FLOPPIES	$1395.
WYSE PC 256K/1 FLOPPY/10MB HARD DISK	$2089.

NOTE: THE AMQUTE PORTABLE HAS MORE FEATURES THAN A COMPAQ, COMES WITH AN AMBER SCREEN & A FULL 90-DAY WARRANTY, AND IS MUCH MORE REASONABLY PRICED. SO WHY BUY A COMPAQ???

PRINTERS

STAR MICRONICS DELTA-15	$ 455.
STAR MICRONICS SG-10 (NEW)	$ 245.
STAR MICRONICS SG-15 (NEW)	$ 409.
STAR MICRONICS SD-10 (NEW)	$ 369.
STAR MICRONICS SD-15 (NEW)	$ 485.
STAR MICRONICS SD-10 (NEW)	$ 529.
STAR MICRONICS SR-15 (NEW)	$ 659.
NEC P2 PARALLEL W/TRACTOR	$ 535.
NEC P2 SERIAL W/TRACTOR	$ 595.
NEC P3 PARALLEL W/TRACTOR	$ 765.
NEC P3 SERIAL W/TRACTOR	$ 825.
NEC ELF 360	$ 425.
NEC 2050 DAISY-WHEEL	$CALL.
NEC 3550 DAISY-WHEEL	$CALL.
NEC 8850 DAISY-WHEEL	$CALL.
AMDEK 5025 25CPS DAISY-WHEEL	$ 459.
AMDEK 5040 40CPS DAISY-WHEEL	$ 939.
JUKI 6100 DAISY-WHEEL	$ 395.
JUKI 6300 40CPS DAISY-WHEEL	$ 707.
JUKI 6000 DAISY-WHEEL PARALLEL	$ 199.
JUKI 2200 TYPEWRITER/PRINTER	$ 289.
OKIDATA 92P DOT-MATRIX PARALLEL	$ 339.
OKIDATA 93P DOT-MATRIX PARALLEL	$ 565.
TOSHIBA P1340 PARALLEL	$ 619.
TOSHIBA P1351 PARALLEL	$1,149.

PRINTERS

DATAPRODUCTS 8010	$ 395.
DATAPRODUCTS 8020	$ 549.

SMORGAS "BOARDS"

SIGMA COLOR 400H MONITOR ADAPTER	$ 549.
HERCULES MONOCRHOME GRAPHICS ADAPTER	$ 289.
NOVA MONO HERCULES-COMPATIBLE ADAPTER	$ 179.
HERCULES COLOR GRAPHICS ADAPTER	$ 149.
AMDEK MAI MONO/COLOR ADAPTER W/64K	$ 295.
GENERIC COLOR/PRINTER ADAPTER	$ 139.
GENERIC MONO PRINTER ADAPTER	$169.
GENERIC SERIAL CARD FOR THE IBM	$ 59.
GENERIC 256K RAM CARD-OK	$ 69.
GENERIC 512K RAM CARD-OK	$139.
AST SIXPAKPLUS 64K/384K	$249./339.
TECMAR CAPTAIN OK/64K/384K	$179./$195./$279.
TECMAR MAESTRO 128K	$369.
GENOA SPECTRUM	$379.
STB CHAUFFER MONO	$289.
STB GRAPHICS PLUS II	$329.
ORCHID PC TURBO 640K	$795.
J RAM II W/2 MB	$449.
J RAM III W/2 MB	$549.
J RAM AT W/2 MB	$549.
STB GRAPHIX PLUS II	$ 329.
8087-3 NUMERIC MATH CO-PROCESSOR	$ 149.
ORCHID PC TURBO 640K	$ 795.

ACCESSORIES

KEYTRONICS KB-5 150 KEYBOARD	$ 139.
KEYTRONICS KB-5 151 KEYBOARD	$ 169.
KENSINGTON MASTERPIECE	$ 109.
PC MOUSE/PC PAINT BUNDLE	$ 149.
ROLLTOP 100 DISK FILE	$ 28.
ROLLTOP 100L LOCKING DISK FILE	$ 36.
ROLLTOP 100E EXECUTIVE DISK FILE	$ 31.
KEYBOARD/DISK DRIVE COVER SET	$ 19.
IBM KEYBOARD STORAGE DRAWER	$ 89.
IBM UNDER-CARRIAGE KEYBOARD DRAWER	$ 69.
IBM VERTICAL CPU STAND	$ 49.
CRT (MONITOR) VALET	$ 89.
AMDEK COLOR MONITOR BASE	$ 29.
PRINCETON GRAPHICS MONITOR BASE	$ 29.
MONOCHROME MONITOR DUST COVER	$ 15.
PRINTER STAND - REGULAR	$20./$30.
PRINTER STAND - WIDE	$25./$35.
KEYBOARD EXTENSION CABLE	$ 12.
MONITOR EXTENSION CABLE	$ 19.
MONITOR POWER EXTENSION CABLE	$ 9.
Y-CONNECTOR	$ 7.
PRINCETON GRAPHICS ANTI-GLARE SCREEN	$ 25.
C.A. 4WAY POWER DIRECTOR P22	$ 69.
C.A. 5WAY POWER DIRECTOR P2	$ 99.
C.A. 6WAY POWER DIRECTOR P12	$139.
C.A. SURGE SUPRESSOR S4	$ 39.
C.A. SURGE SUPRESSOR S6	$ 59.
COMPUGUARD CPP 12 SURGE PROTECTOR/NF	$ 39.
8087-3NUMERIC MATH CO-PROCESSOR	$149.

MODEMS

BIZCOMP INTELLIMODEM-ST W/INTELLISOFT	$ 329.
BIZCOMP INTELLIMODEM-XT W/INTELLISOFT	$ 359.
HAYES 1200B W/SMARTCOM II	$ 369.
HAYES 1200 EXTERNAL	$ 395.
HAYES 2400 EXTERNAL	$ 695.
SIGNALMAN MARK XII EXTERNAL	$ 259.
EASY MODEM 1200B	$ 249.

NOTE: ALL BIZCOMP MODEMS ARE 100% HAYES-COMPATIBLE. THE XT MODEL IS A HALF-CARD WHICH FITS INTO THE IBM A/T OR X/T.

MONITORS

AMDEK V300/V310A	$143./$149.
AMDEK C300 COMPOSITE COLOR	$ 258.
AMDEK 600 RGB 13″	$ 379.
AMDEK 700 RGB 13″	$ 449.
AMDEK 710 RGB 13″	$ 569.
TAXAN 116 COMPOSITE AMBER	$ 120.
TAXAN 122 MONOCHROME AMBER	$ 137.
TAXAN 410 RGB COLOR	$ 316.
TAXAN 420 HI-RES RGB COLOR	$ 439.
TAXAN 440 ULTRA HI-RES RGB	$ 569.
PRINCETON GRAPHICS MAX-12E MONOCHROME	$ 179.
PRINCETON GRAPHICS HX-12 RGB COLOR	$ 439.
PRINCETON GRAPHICS SR-12E HI-RES RGB	$ 569.
QUADRAM AMBERCHROME	$ 169.
SAMSUNG TTL MONOCHROME	$ 109.
FORTIS (BROTHER) FC-10 RGB	$ 349.
WYSE GREEN TTL MONITOR	$ 195.

HARD DISK DRIVES/FLOPPIES

IOMEGA BERNOULLI BOX 20 MEGABYTE	$2,595.
IOMEGA BERNOULLI BOX 20MB PLUS	$2,795.
TALLGRASS 25MB/60MB TAPE BACK-UP	$2,619.
TALLGRASS 35MB/60MB TAPE BACK-UP	$3,369.
TALLGRASS 50MB/60MB TAPE BACK-UP	$3,995.
TALLGRASS 80MB/60MB TAPE BACK-UP	$5,369.
TALLGRASS IBM INTERFACE	$ 169.
10MB INTERNAL W/ CONTROLLER	$ 549.
20MB INTERNAL W/ CONTROLLER	$ 695.
20MB INTERNAL FOR IBM A/T	$ 895.
45MB INTERNAL BACKUP	$1,195.
TEAC FD-55B 360K DS/DD FLOPPY	$ 89.

IBM SOFTWARE

FRAMEWORK	$ CALL.
DBASE III	$ CALL.
WORD PERFECT 4.0 (IBM OR TT)	$ 249.
SIDEWAYS FOR APPLE OR IBM (FUNK SOFT)	$ 45.

COPYWRITE
BACK-UP IBM PC SOFTWARE WITHOUT ANY EXCEPTION, INCLUDING dBASE III, SYMPHONY, FRAMEWORK, AND ALL OTHER PROLOK DISKS.
ONLY $50.00

PRINTMASTER	$ 49.
MASTERTYPE (NEW/IMPROVED) COPY II PC V2.4	29.
COPY II MAC (FOR THE MACINTOSH)	$ 29.
COPY II PLUS (FOR THE APPLE)	$ 29.
COPY II-64 (FOR THE COMMODORE)	$ 29.
FLIGHT SIMULATOR (MICROSOFT)	$ 34.
FLIGHT SIMULATOR (SUB-LOGIC) FOR APPLE	$ 39.
MANAGING YOUR MONEY (MECA)	$ 109.
SUPER KEY	$ 49.
TAX WIZARD (GAMMA)	$ 49.
INTUIT INTEGRATED SOFTWARE	$ 69.
SIDEKICK	$ 99.
NORTON UTILITIES 3.00	$ 72.
TURBO PASCAL	$ 49.
TURBO PASCAL W/ 8087 SUPPORT	$ 79.

ZERO DISK
ALLOWS YOU TO RUN COPY-PROTECTED SOFTWARE FROM YOUR HARD DISK W/O HAVING THE SYSTEM DISK IN THE FLOPPY DRIVE!!!
only $75.00

WE HAVE IBM'S IN STOCK!

AT THESE PRICES WE COULD LOSE ALL OUR MEMORY
64K 150NS RAM CHIP SET (JAPANESE BRAND) 6.95/set
SPECIAL ENDS SATURDAY SEPTEMBER 7, 1985

TOSHIBA P351 (NEW)
288 CPS IN DRAFT, 100 CPS IN LETTER QUALITY, 240 CPS IN CONDENSED, 24-PIN OVERLAPPING, 4K BUFFER, PARALLEL/SERIAL PORTS, ACCEPTS FONT CARTRIDGES AND DOWNLOADABLE FONT DISKS.
W/TRACTOR, ONLY $1,399.00

STORE HOURS
MON.-FRI. 10:00 to 7:30
SATURDAYS 11:00 to 5:00

(415) 591-1663
ext. 303

1501 EL CAMINO REAL BELMONT, CA 94002

SCI/TECH COMPUTER STORES

"DETERMINED TO BE BEST — DESTINED TO BE FIRST"

People who treat information as a commodity that has to be guarded carefully, only let out a little at a time for high prices, find that the rules don't seem to work that well. The information gets out, and it starts replicating itself. Then they get all put out about it, and they have to pay a lot of lawyers to try to chase after people.

vent them from having their people standing at terminals like everybody else, but that's the whole point — get them to the same level. Human frailty is in there. You want to keep that as a definite common commodity.

The major reason is that if this [surveillance] could happen, people shouldn't trust us with the kind of information that otherwise might be snapped up by other computers on the system. We are not in the business of selling directly or indirectly sorted lists of marks to either businesses or government.

A major purpose of Community Memory is to foster the development of local information exchange centers — we use a word for it, we call it a "public house." It's the closest word we can come up with in the English language, and it has much more meaning in the British vernacular in terms of the British local pubs, which are in effect community gathering points.

As the barber shop used to be...

Right, the cracker barrel at the store, on and on. Those things we don't have anymore. So we want to try to redevelop that, and this is a significant tool for that. We hope that around each terminal there collects a scene like that.

Now, if that network of places is functioning, if agents of the devil shut off Community Memory, the community is still there. The people are still used to coming to them and exchanging information, and that is a very significant element of community organization, the community infrastructure. We're much more interested in *that* developing than we are in a particular kind of computer system developing.

Computer technology enables that, it feeds into that, if you look at it right. It makes it likely to happen. And so that wouldn't happen if you can just call it up from the isolation of your terrorized home, live the rest of your life in, what is it, "the comfort and convenience of your own home." That's a particular fate I don't want to be part of.

Industrial society has always moved in the direction of fragmenting groups down to the individual level, because then you can sell the individual a whole complement of things. And to include in that access to something called a community over a wire is not something we're interested in participating in. We don't want to have everybody fragmented down to their own little individual self at the end of a cable that can easily be cut. That vision of society is not the vision we're after. We're after the vision in which people come out of their particular cells and meet each other, deal with each other in a more public environment. We're interested in the reestablishment, I say, of the agora, of a neighborhood.

I've heard people say that The Source or CompuServe is like that, that they develop an electronic agora, that there is a community there.

I'm not saying none of that ever happens. But I'm saying that the method that's being used has a number of serious limitations. It does not encourage people to become less dependent on the technology, for one thing. I know what you could do to that computer to make sure that if people call it up, nothing is there. Now where are they? Well, they do have some contact, but they're right back where they came from.

Having everybody hang off the big mama bear in the sky is not my idea of a safe situation for society. And I look at this with a fairly, I wouldn't say apocalyptic, but I would say... I'm an engineer and I view things in the worst case standpoint. I took a statement seriously that Buckminster Fuller made when he was asked about what things would be like in the year 2000. He said, "You don't need to ask what they'll be like in the year 2000 — all the significant decisions will have been made by the year 1985."

There are deadlines to this. You don't know what the deadlines are, you only know in retrospect. So I set 1985 as the deadline in my view of things. Whether we're actually making it or not, I don't know; I would say right now we're not. We're getting there, we're in the right direction — we're behind schedule.

Where does the money come from for all this, and can you avoid being co-opted by the people who give you the money?

Well, so far we have avoided being co-opted. We have managed to organize a series of individual donations, and a lot of the money came from me, or from this corporation through various interesting routes, which I don't really want to go into. We did get Steve Wozniak to make a significant donation. We're interested in more. But you can't do that as a matter of course.

I have my own philosophy on this one, called "filling the junk box." Which means that capitalism is very good at creating junk out of what were once valuable, rare things. Makes a lot of them and now they're junk. Of course, obsolescence guarantees that.

I, from my technical perspective, know the junk still works. The Osborne computer still worked after the company went out of business...excuse me, the company never went out of business, they came back. But it would never be the same. All through that period the computers worked, and they worked in part because the user groups continued to support them. The user group is also part of the system, but that's not part of the equation, classically.

The junk box, of course, is really the technology that is no longer glamorous, but is still functional. I designed a modem that could be built from just junk-box parts, and it worked just fine. That drove prices on modems down. Putting out the technology under one cover means that after the capitalists get through with it, the stuff still works. Then people who don't have to apply those same standards of investment get to use it...I'm one of those who believes that there are other kinds of wealth than money.

One is wealthy if one can make things happen that one wants to have happen, that is, capability. So I buy tools, that's how I enhance my own capability. There are other kinds of capability; for instance, we all want to live in nice neighborhoods. Well, what does that mean? A lot of it means that it's a place where people like to communicate with each other, where you don't live in fear and suspicion of everybody that you see. That, in fact, when the neighborhood is really pleasant, means that there is a network or series of networks that develop. That is a kind of social wealth that I'm interested in helping develop.

What about information wealth?

That's an interesting one. The con-

Information best serves everyone by being freely available, and in the technical community we show it again and again that you make progress in the technology when you exchange information.

cept of information has...first of all, information is not a commodity...A commodity is something which has got a lot of little things and they're all the same, like grains of corn. A commodity is something whereby if you sell it, it's gone. You can't sell it twice. However, information is something that you can sell many times, and it actually becomes more valuable the more times you sell it, the more it gets around.

Now, people who treat information as a commodity that has to be guarded carefully, only let out a little at a time for high prices, find that the rules don't seem to work that well. First of all, the information gets out, and it starts replicating itself. Then they get all put out about it and they have to pay a lot of lawyers to try to chase after people and get them to stop doing it.

This is an opposite trend to what seems to be happening right now, though...a trend away from free information and toward information as a commodity.

I think that is shaping as a significant area of contest. The things I'm trying to do in the area of hacking, and the hackers' community, are going to be approaching that from the other direction. That's where we declare that information best serves everyone by being freely available, and in the technical community we show it again and again that you make progress in the technology when you exchange information.

Has it been your experience that a lot of people are working towards these goals?

I think that a lot of the people at the lower levels are interested in working towards it....They want to be able to give and take at the same time, and you do that with a free exchange of information.

You are not going to go to talk to the heads of any major companies, or even significant ones — you're talking to the head of a company now, but this is not a significant company — who are going to say yes, I'm for the totally uninhibited exchange of information. They are in effect captured by their own property. I just don't act like that, I guess, and this will never be a major corporation. That's okay with me, because that's not my game; my goal in life is not to create a major corporation.

What particular things do you want to go into the "Hackers' Mac"?

I would like to have some moderately sophisticated graphics capability, much better than you can get in anything under $10,000 right now. So I have an idea for what is the base level of getting enough graphics, and then how to expand that, so it becomes multi-color and multi-gray-scale, and various sophisticated modes of addressing. Another point is that I want it to have a multiple DMA-channel, preferably three or more channels to be available to the outside world. There are four-channel controller chips right now, and I'm vacillating between that chip and using a general purpose Z80 stuck off in one corner to do the control of the DMA. The important thing there is to allow lattices of these ["Macs"] to be built. That gets you a long way into the future...if this thing is simple and cheap enough to be sold as a kit terminal, really, for kids, which then grows up and up into something that becomes a multiprocessor array, the kids come together and you can plug them together.

You have a four-channel DMA device, you have the equivalent of the atom with a valence of 4 — that's silicon and carbon, so you can generate structural arrays that you're already familiar with. I'm not saying that that's going to generate *life*, but I think it's an interesting parallel.

Would you call yourself an information addict?

Actually, no. I'm a daydreamer. I get my pleasure out of imagining how things could be and then moving towards putting the parts together.

I certainly get a lot more fun out of doing with information, a sort of creating a theater process of imagination, that's a lot of fun. It's what I try to do with design, and in my executive position I don't get to do a lot of that, but I make sure I get to do some. And it's that process of imagination that I'm interested in empowering as much as possible with the technology I'm developing. It basically means building the imagination of the user into the system in operation.

The serious business computer industry has never faced the fact that kids who can't read can still learn to play video games. [It says] you can't just use it, you can't just walk up and play with it, for God's sake, and do anything serious, come now. There's millions and millions of quarters that say otherwise. I'm interested in developing the video displays and other kinds of devices which allow you to interact with the computer system through non-verbal channels. If you want to move the cursor from here to there you don't have to say "Go down, down, down, down, left, left, left." You say "Go there," and you point.

Like the touch screen or the mouse.

Those are some crude examples, yes. We've got something that I'm doing, a project in limbo at the moment. It allows you to express your intention to the computer and see the result with minimal intervention from bodily movement. When you were a baby, you learned how to move your body so that it moves where you want it to; you develop a kinesthetic sense. There is a kinesthetic sense that can be developed involving a computer system — this is what the kids do when they learn video games. They start fumbling around and get a feel for it. This can be done on any other computer system and it should be.

That's the kind of stuff I want to do. And I want to do that based upon the profits we make here, that will be plowed back into that. It isn't very expensive to do this development if you can do it right.

Is there anything else you think we ought to go into?

Basically Community Memory is not going to happen just by getting a lot of money together in one place. That would make something else happen. It is going to happen by getting enough people to understand what the opportunities are with it, and understand that by acting together, a relatively small group would be able to afford to put together a system and basically open up a door to the future. The doors to the future are always open; nobody's closing them, but you have to go through the door. □

No One Will Beat Our Low Prices and Fast Delivery

FLAVOR OF THE MONTH
MATH CO-PROCESSOR
• 8087-3
$95

DOUBLE WAMMY
APPLE IIE
• Professional System
• 128K • 80 Column Card
• 2 Drives • Tilt Monitor
$1349

DILLY DELUXE
MICRO-SCI
• 80 Column Card • w/64K
• For Apple IIE
$95

CORONA
PORTABLE
• 256K • 2 Drives
• Monitor • Keyboard •DOS
$1195

SYSTEM #1
IBM PC 256K
• Two 360K Drives • Green Monitor • Color Card w/Printer Port • DOS 2.1
$1895

MAIL ORDER AND SAVE

DELIVERY AVAILABLE IN LA AREA

SYSTEM #2
IBM PC 640K
• Two 360K Drives • 384K mem. Card • Clock/Serial/Par.
• Monochrome Card w/Par. Port • 10 MG Hard Disk
• Green Monitor
$2695

PRINTERS

EPSON
Call for Best Pricing

OKIDATA

182, 120 CPS	$230
83, 120 CPS	539
192, 160 CPS W/Roms	350
193, 160 CPS	585
84, 200 CPS	665
OKI-MATE 20, Color	229

CITIZEN

MSP-10	$299
MSP-15	449
MSP-20	Call
MSP-25	Call

MODEMS

HAYES

Micromodem IIE	$169
300	159
1200	389
1200B IBM Internal	359

PROMETHEUS

Promodem 1200	$295
Promodem 1200A	309
Promodem 1200B	275

ANCHOR

Mark 12	$218
Express	299

BIZCOMP
Call for Low Prices

IBM EXTRAS

AST RESEARCH

SixPAK +, 64K w/Side Kick	$229
Reach w/Crosstalk	375

PARADISE SYSTEMS

Multi Display Card	$249
New Modular Card	269

D & D MEMORY CARD

MF-100 + 64K same as SixPAK +	$129

HERCULES

Color Card w/Printer Port	$139
Mono Graphics Card	305

GOODIES

IBM Printer Cable	$19
64K Ram Set of Nine Chips	8
256K Ram Set of Nine Chips	40

APPLE EXTRAS

MICROMAX

Viewmax, 80 Column	$135
Viewmax 80E, 80 Column w/64K, IIE	119

ORANGE MICRO

Grappler +	$ 85
Grappler + Buffered w/64K	155

APPLE

Super Serial Card	$139

DRIVES

IBM COMPATIBLE
••••

TEAC

55A, 160K	$ 95
55B, 320K	89
55F, 720K	135

TANDON

TM100-2, 360K	$ 94
TM101-4, Quad Density	275

APPLE COMPATIBLE
••••

MICRO-SCI

A2 or A20	$155
Controller Card	60

D & D HALF HEIGHT

525A	$129
525C for IIc	129

MONITORS

TAXAN

Composite Green or Amber	$119
Monochrome Green or Amber	134
425 RGB	389
440 w/Bob Board	789

PRINCETON GRAPHICS

Max 12E	$160
HX-9,	429
HX-12,	445
SR-12 w/Doubler Card	789

SYSTEMS

IBM

PC 256K, 1 Drive	$1495
PC 256K, 2 Drives	1575
XT 256K, 1 Drive	1880
XT 256K, 1 Drive 1-10 MG	2280

COMPAQ

Portable	$1899

Call on Desk Pro's

HARD DISK DRIVES

ALL WITH 1 YR. WARRANTY

IOMEGA

Bernoulli Box	Call

MITSUBISHI

10 MG w/IBM Cont. ½ Ht.	$499

DISKTRON

10 MG w/IBM Cont. Full Ht.	$429

SHUGART

20 MG w/IBM Cont.	$769
33 MG Hard Disk for AT	749

DISKETTES

Call for quantity discounts

PRECISION COPY

SS 100 (Box of 10)	$17
DS 100 (Box of 10)	19

DYSAN

SS 100 (Box of 10)	$30
DS 100 (Box of 10)	34

d&d Discount Computers

SELLING TO YOU SINCE 1978

MAIL ORDER:
13324 HAWTHORNE BLVD., SUITE 201
HAWTHORNE, CA 90250

ORDER DESK:
For Service and Satisfaction
(213) 970-0206
Ask About Phone Rebates
Hours: Monday — Saturday 8 am to 6 pm

WE CARRY TO MANY ITEMS TO LIST, PLEASE CALL FOR A QUOTE ON ANY ITEM.

VISA MasterCard

No Surcharge for Credit Cards

Terms: All merchandise new. We accept MC, Visa, Wire Transfer, C.O.D. (call), Certified Check, P.O.'s from qualified firms. Shipping: minimum 4.00 first 5 pounds. Tax: California residents only add 6½% sales tax. All returns subject to 15% restock fee. Prices Subject To Change

Preview:

The 3rd Personal Computer Faire

The 3rd Personal Computer Faire, scheduled for September 5 – 7 at San Francisco's Brooks Hall/ Civic Auditorium, offers a variety of events and exhibits of interest to the microcomputer user.

Manufacturers, retailers and other companies ranging from giants like AT&T and IBM to small local enterprises will be exhibiting their latest products; user groups will also have booths on the exhibit floor. In addition, there will be free hands-on areas for Faire-goers to try out hardware and software, and free computer clinics, conducted by the Independent Computer Consultants Association, which will give users the opportunity to discuss their computer-related problems with professional consultants.

All three days of the Faire will also be filled with conferences and seminars to address a broad spectrum of interests. Most conferences are included in the admission price; a few, marked PDS on this schedule, are Professional Development Seminars and require an additional fee. Check the schedule for dates, times, and locations of individual conferences.

The Faire will be open from 10 am to 6 pm each day. One-day tickets purchased on-site will be $10, three-day tickets $15. Attendees can save $3 on the three-day admission price by preregistering; call (617) 965-8350 for preregistration information.

3rd PERSONAL COMPUTER FAIRE CONFERENCE SCHEDULE

DAY	TIME	ROOM	PANEL	
Thursday, September 5	10:30- 5:30	402	PDS	Getting Started With Lotus 1-2-3
		403	PDS	An Introduction to C Programming
		406	PDS	dBASE II/III Advanced Tips, Tricks & Techniques
		410	PDS	dBASEII/III Fundamentals
	11:00-12:30	304	3.4	Your Very Own Mainframe?
		306	1.1	Multiuser vs. Network Systems
		316	2.2	Database Management Software
		322	6.3	The Business of Writing and Marketing Software
	1:00- 2:00	Polk	3.5	Tomorrow's PC: Integrating Voice & Data Communication
	1:30- 5:30	404	PDS	The Micro to Mainframe Connection
		408	PDS	Understanding the Basics of PC Networks
	2:00- 4:00	415	IBM	IBM Technical Seminar
	2:15- 3:45	304	4.8	The Dvorak Keyboard Today
		306	1.2	LANS: The Fundamental Issues
		316	2.3	Spreadsheets
		322	3.2	The Future of Optical Storage Technology
	4:00- 5:00	306	4.1	Upgrading Your Personal Computer
		316	2.4	Project Management Software
		322	2.7	Portable Software
Friday, September 6	10:30- 5:30	402	PDS	Techniques for Writing User
		404	PDS	Integrating PCs in the Corporate Environment
		406	PDS	Using and Understanding IBM's PC Network
		408	PDS	dBASE II/III Programming
		410	PDS	IBM PC & DOS Training
	10:30-12:30	415	IBM	IBM Technical Seminar
	11:00-12:30	304	2.9	Working Smart: Using Productivity Software For Optimal Results
		306	1.3	Considering Options In Local Area Networks
		316	4.3	Introduction to UNIX
		322	2.5	Accounting Packages
	1:00- 2:00	Polk	3.6	Alan Kay: "Don't Settle for Anything Less"
	2:00- 4:00	415	IBM	IBM Technical Seminar
	2:15- 3:45	304	2.10	Business/Presentation Graphics
		306	1.4	Linking the Micro to the Mainframe
		316	4.4	Mac In the Office
		322	4.7	Computer Technology & Persons With Disabilities
		Polk	3.1	Artifical Intelligence and Expert Systems
	4:00- 5:00	304	3.3	Developments In Speech Synthesis and Voice Recognition
		306	6.2	Effective Marketing Strategies for the '80s
		316	4.5	Profiles In Corporate Computing
Saturday, September 7	10:30- 5:30	402	PDS	Symphony
		404	PDS	dBASE II/III Design Workshop
		406	PDS	How to Become a Computer Consultant
		408	PDS	Lotus 1-2-3 Advanced Techniques
		410	PDS	Micro Accounting: Capabilities, Evaluation and Acquisition
		415	IBM	IBM Technical Seminar
	11:00-12:30	304	2.6	Tax, Finance and Investment Software
		306	2.8	dBASE Forum
		316	2.1	Word Processing
		322	5.3	CAD/CAM Software Demonstrations
	1:00- 2:00	Polk	6.4	Software Entrepreneurs: From Start-ups to Upstarts
	2:15- 3:45	304	5.2	Automating a Medical Practice
		306	1.5	Communications Software and Modems
		316	5.1	For Lawyers: Dealing With the Information Glut
		322	5.4	Educational Software Demonstrations
		Polk	2.11	Window Wars
	4:00- 5:00	306	4.6	UPDATE: Full-Function Portables
		316	4.2	Setting up a Home Office
		322	6.1	Regulatory Issues: Exporting High Technology Products

The MonsterMac™

2 Megabyte Macintosh™ System Upgrade

Designed with the sophisticated business and home user in mind, the MonsterMac™ is the first product to provide not only 2 megabytes of RAM memory for use in a variety of flexible modes, but also several additional features not found with any other upgrade which extend the real potential of the Macintosh and realize the full capablities of many memory-intensive applications.

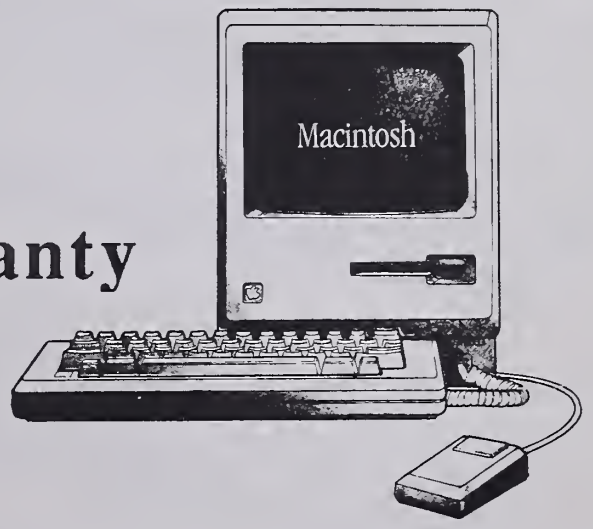
- Up to 1.8 megabytes available for use either as a RAMdisk to greatly reduce or even eliminate disk access time, or as contiguous application space.
- An internal parallel bus connector for expansion and interface cards currently under development. This opens up the closed architecure of the Mac for the first time.
- Four sockets for EPROMs (Erasable Programmable Read Only Memory) for installing programs that will not be erased when the Mac's power is turned off, so that they are instantly available when you turn the Mac on, eliminating the need to load them from disk. Two of these sockets currently contain Levco's own firmware that manages the extra memory.
- Circuitry which increases the speed of calculation-intensive applications (spreadsheets, databases, compilers, and even BASIC programs) so that they execute in as little as three-quarters the time taken by a standard Mac.
- A built-in piezoelectric fan that keeps the MonsterMac™ as cool as a 128K Mac.

Have you ever tried to use Jazz™ on a 512K Mac and found yourself wishing you had enough memory available to use more than two or three modules at the same time? Would you like to be able to run spreadsheet programs like Crunch™ up to 50% faster, with more cells available for more complex calculations? Ever wonder what it would be like to run Switcher with five, six or more applications, along with a RAMdisk and Turbocharger? Now you can.

Installation

512K to 2 meg: $895
128K to 2 meg: $1100
90 day parts/labor warranty

Appointments for installation and demos are now being scheduled



Levco Enterprises

6160 Lusk Blvd., #C-203
San Diego, CA 92121
(619) 457-2011

Northern California:

CJS Systems
48 Shattuck Square
Suite 15
Berkeley, CA 94704-1140
(415) 841-7625

Southern California:

A B & D Development, Inc.
24001 Via Fabricante, # 1005
Mission Viejo, CA 92691
(714) 472-6463

Master Manufacturing
14319 Swift Drive
La Mirada, CA 90638
(213) 944-1069

Preview Of Commodore's Amiga

By Matthew Leeds

Commodore's Amiga represents a significant effort by the makers of the C64 to break into the business market.

On Tuesday, July 23 Commodore International Ltd. announced the formal release of the long-awaited Amiga A1000 PC. In a black-tie gala at New York's Lincoln Center, over 2000 people were treated to an introduction to the computer that many software developers have called "the start of a new generation." Commodore hopes the Amiga will change its image from that of a mass-merchandiser of under-$200 game machines to that of a serious business computer manufacturer.

Commodore debuted the Amiga in San Francisco two days later at SIGGRAPH. The booth was mobbed from the moment the doors opened. In the words of one Commodore staffer, "We expected that we would get a good response, but nothing like this."

There is no question that the Amiga is a technological leap in both capability and cost. The Amiga runs the 16/32 bit 68000 and uses three special VLSI chips to control its powerful graphics, sound, windowing, and multi-tasking capability. The first thing you notice while watching the machine in operation is its speed. Since the display is memory-mapped video, the CPU does not need to calculate each pixel during every screen refresh. This frees it for other tasks, and the result is fast action in all respects.

Let's go into some details about the Amiga. The machine comes with 256K of RAM, and has an expansion port dedicated to the addition of another 256K of RAM at the front. There is also 192K of write-protected RAM used to store the operating system. Commodore has said that at some time in the future they might offer ROM chips containing a "finalized" version of the operating system; however, I think that this would be a bad idea. Look at the problems the Mac has had with its locked-in BIOS. The upgrade to the new Mac BIOS will require swapping chips, most likely through a

Dac-easy accounting

$69.95

The software revolution of the year!

All 7 complete modules on 1 disk! Compare our features with other packages costing thousands more!

General

- •Menu Driven •Fully Integrated
- •MS-DOS & PC-DOS
- •RUNS ON PCjr, PC, XT, AT, AND COMPATIBLES
- •Password Protection In All Programs
- •Slipcased Binder
- •OVER 300 DIFFERENT REPORTS!!
- •OVER 90 ROUTINES!!
- •File Capacity Limited Only By Disk Space
- •Service Contract Available
- •ONLY $49.95 FOR ALL 7 MODULES
- •Money Back Guarantee

General Ledger

- •Double Entry •Unlimited # Of Accounts
- •Multi-Level Accounting
- •Unlimited Departments
- •3 Year Account History For CRT Inquiry
- •Pencil & Pen Feature To Correct Mistakes Without Reverse Entries
- •UNIQUE Budgeting Routine (See Forecasting)
- •CRT Voucher Inquiry
- •All Reports Compared to Last Year or Budget
- •Unlimited Journals

Accounts Receivable

- •Open Item or Balance Forward
- •7 Customized Columns For Aging Report
- •Unlimited # Of Customers
- •Mailing Labels With 4 Different Sorts
- •Automatic Finance Charges
- •Supports Partial Payments •Directories
- •3 Year Customer History for # Of Invoices, Sales, Costs, And Profits
- •Customized Text On Statements
- •Cash Flow Analysis •Sales Analysis
- •Automatic Sales Forecasting By Customer, Salesman, Or Customer Type

Accounts Payable

- •Check Printing •Automatic Allocation Of Available Cash To Payables
- •Vendor Directories With Sorting By Vendor Code, Name, Or Territory
- •Aging Reports With 7 Customized Columns
- •Unlimited # Of Vendors
- •Mailing Labels •3 Year Vendor History For CRT Inquiry And Printing
- •Flexible Payment Calendar
- •Automatic Forecasting of Purchases
- •Unlimited Allocations Per Invoice
- •Up To 10 Invoices Paid Per Check

Inventory

- •Supports Average, Last Purchase, And Standard Costing Methods •Physical Inventory
- •Accepts Any Measure Units Per Case Like Fractions/Dozens/Gross/Etc
- •Automatic Changing Of Costing Methods
- •Time And Product Inventory
- •3 Year Product History In Units, Dollars, Cost, And Profits
- •Automatic Forecast Of Product Sales
- •Automatic Pricing Assignments
- •Alert And Activity Reports With 11 Sorts
- •CRT Shows On-Hand/On-Order/ Committed/Sales/Cost/Profit/Turns/GROI

Purchase Order

- •Allows Up To 99 Lines Per Purchase Order
- •Per Line Discount In %
- •Purchase Order Accepts Generic Discounts/Freight/Taxes/Insurance
- •Purchase Order Accepts Back Orders & Returns
- •Purchase Journal
- •Automatic Interfacing With General Ledger, Payables, And Inventory

Billing

- •Invoicing On Plain Or Pre-Printed Forms
- •Prints Sales Journal
- •Automatic Updating Of Committed Products In Inventory
- •Ability To Customize Invoice For Remarks
- •Allows Return Credit Memo
- •Interfaces With Inventory, Accounts Receivable And General Ledger

Forecasting

- •Unique program that automatically forecasts using your 3 year history
- •Forecast Revenue And Expense Accounts
- •Forecast Vendor Purchases
- •Forecast Customer Sales, Cost, And Profit By Customer Or Salesperson
- •Forecast Inventory Item Usage By 4 Automatic Methods
- •Forecast By Same As Last Year, Or % Base From Last Year, Or Trend, Or Least Square Trend Line Analysis Method

NOT COPY-PROTECTED

Minimum Hardware Requirements:
128K memory, one 5 1/4 DSDD floppy disk, 132 column printer in compressed mode, 80X24 CRT, MS-DOS, PC DOS 2.0 or later.

Runs on your: IBM (PCjr/PC/XT/AT), AT&T, EPSON, TANDY (1000/1200/2000), TI, COMPAQ, CORONA, SANYO, COLUMBIA, ETC.*

*(Computer names are tradenames and/or trademarks of their respective manufacturers)

Now Available in Northern California
To Order Call:
Amcal Marketing Co.
(415) 861-0563
or Send Coupon

30 Day Money-Back Guarantee: Before you spend thousands of dollars on an accounting system, try **dac-easy accounting**, and if you are not fully satisfied, return it. For $69.95 you owe it to yourself to find out that software doesn't have to be expensive to be the best.

Amcal Marketing Co., 1225 6th St., S.F., CA 94107

$69.95 plus $5.50 postage and handling CA residents add 6½% sales tax ($4.55)
Enclose check or money order with coupon. $5.00 for C.O.D. Allow 10 days delivery.

☐CHECK ☐MONEY ORDER ☐COD

ACCOUNT NO._____ EXPIRES_____

Name _____

Address _____

City _____ State _____ Zip _____

Phone _____ Signature _____

dealer. It's far easier to just boot a new version from disk.

The keyboard has ten programmable function keys, two special function keys, a 13 key numeric pad, cursor keys, and a "Help" key. The feel is fairly good, with only a little bounce. There is a caps lock LED. The keyboard is detached, and connects with a standard phone plug. There are little fold-down feet, just like on the IBM. In fact, visually the Amiga looks quite a bit like the IBM PC. The single 3½" disk drive is built into the main unit. It is a double density, double sided drive, with a formatted storage capacity of 880K. It uses Direct Memory Access read/write for fast data transfer. There is no room in the main unit for additional drives, however, it is possible to daisy chain three additional drives, either 3½" or 5¼". More on the 5¼" drive later.

The Amiga provides a powerful multi-tasking operating system and a user interface that features multiple windows, multiple screens, icons and menus, fast graphics and animation, great sound, and a two-button mouse. The system is expandable to over 8 Meg of RAM.

The display outputs are: RGB (digital or analog), NTSC composite video, and RF modulated video for connection to a TV. Recommended display is the RGB analog. Other output ports include a true RS232 serial port, Centronics parallel (reconfigurable), system expansion bus, stereo sound (RCA connectors), and controller ports (mouse, joysticks, graphics tablets, etc.).

The display resolution starts at 320 × 200 in 32 colors, and goes up to 640 × 400 in 16 colors. Playing some programming tricks, it's possible to get all 4096 colors on the screen at the same time in 640 × 400 mode, but you lose quite a bit of speed. There are eight sprites, sixteen pixels wide and any height, with collision and priority controls. The audio specs: signal to noise ratio 70 dB, distortion less than 1%, frequency response 20 – 6000 mh; impedence 300 ohms, four channels, each capable of playing a full chord; amplitude or frequency modulation, or both.

Included with the system will be the operating system software called AmigaDOS, a user interface called Intuition that is icon driven and uses a two-button mouse, Microsoft BASIC customized for the Amiga, a system tutorial on-disk written by Mindscape, and a text to speech package in either a male or female voice with unlimited vocabulary. Also included will be a Command Language Interface for programmers and sophisticated users who prefer direct access to DOS. Dealers will have a choice of bundling a low-res paint program called *Graphicraft* by Island Graphics and a word processor called *Textcraft* by Arktronics.

Commodore has also announced several peripherals. The A1080 monitor has RGB analog and digital inputs, as well as a NTSC composite video input. Its bandwidth is greater than 10 mh, and it has a .39mm dot pitch. Price will be $495.00. The A1050 modem is Hayes compatible, 1200 or 300 baud, auto answer/dial, with most of the expected bells and whistles. No price was mentioned.

There are also several disk drives available. There are two types of 3½" drives. If you are buying your first additional drive, it will not require a separate power supply, as it will derive its power from the computer. However, any additional drives will require their own power supplies, hence there are two types of drives. Also available is a 5¼" drive, plus software that will allow it to read/write MS-DOS format. Commodore has also stated that the software will allow for IBM-PC emulation without the use of a co-processor. That's right, they claim to have run *1-2-3*, *Flight Simulator*, *dBase III*, *MultiPlan*, and other packages right off the shelf. Although prices were not being given as "firm," the additional 3½" drives were quoted at around $300, and the 5¼" at $400.

Several third-party hardware developers have announced products for the Amiga. A-Squared Systems of Oakland has produced the Amiga Eye, a color video digitizer. This device will capture a NTSC video image in real time (8 grey levels) or in three frame scans (color) and allows you to manipulate the hue, saturation, luminance and brightness over the computer's full range of 4096 colors. It is fully compatible with all of the paint and graphics software available for the Amiga.

Kurta Corp. announced the Penmouse, a battery powered cordless pen that uses a graphics tablet to allow a more natural movement when digitizing drawing or other flat art.

Tecmar has several products available for the Amiga. The T-Card is a multi-function expansion card that can contain up to 1 Meg of additional RAM. It features a serial port, clock/calendar w/battery backup, hard disk interface, parallel printer port, and its own power supply. The T-Disk is a 20 Meg, 3½" hard disk for the Amiga. The T-Tape is a 20 Meg tape backup unit that can be linked to the Amiga through a floppy disk port. It has its own power supply. Tecmar also announced the T-Modem, a Hayes-compatible modem with selectable 300, 1200, or 2400 baud rates.

There is also quite a bit of software for the Amiga. Word processing, database, spreadsheet, business graphics, accounting, and telecommunications packages are either available on release or by year's end. Several languages and programming tools have also been announced. Lattice, Inc.'s compiler, MS-DOS cross compiler, UNIX cross compiler, VAX cross compiler, LMK, LSE, and TMN will be available at once, as will TLC-LOGO from The Lisp Company. Metacomco is releasing an Amiga assembler/linker, Cambridge LISP 68000, and MCC Pascal 6800.

The Amiga is a wonderful game machine. Electronic Arts will release over a dozen titles by Christmas, six of which will be written just for the Amiga. Infocom has put its entire product line out for the Amiga, Sublogic has a new flight simulator called *Radar Raiders*, Mindscape has a mystery game called *Deja Vu*, and Hayden has put out *Sargon III* with nine levels of play and a library of over 68,000 moves.

Music software will reach new highs on the Amiga's four-channel stereo sound. Cherry Lane Technologies will release several music creation packages. Sequencing, scoring, editing, and printing musical compositions will be supported. MIDI interfaces will also be available. The Amiga has powerful sound sampling capabilities, and there has been talk of a digital sound sampler. Marc Aaron Canter of MacroMind (*Videoworks For The Mac*) says that with the proper software, the Amiga should be at least as good as the Ensonic.

Distribution of a high-end computer may be a problem for Commodore. Dealers are wary of getting burned after Commodore cut the price of the C64 from $595 to $200 and sold it through mass merchandisers. Although Commodore has made no announcements on a dealer network, Frank Leonardi, Commodore vice president of sales/business, has been meeting with members of the Association of Better Computer Dealers (ABCD) and promising that the Amiga will be kept out of mass market channels. The Amiga will need computer speciality retailers for proper end-user support, and it would be self-destructive for Commodore to allow mass market merchandisers to sell it.

One solution to the marketing problem is Value Added Resellers (VAR). These dealers intergrate hardware and software into vertical market systems that meet specific needs. The potential applications of such systems are limited only by the imagination of programmers and developers. Architects, motion picture and television producers, fashion and textile designers, map and chart producers, typesetters, and CAD/CAM applications are but a few of the possibilities. Interior designers, landscapers, musicians, art directors, commercial artists, engineers, and educators will find a variety of unique applications waiting for their use. The Amiga brings the power and speed of computers costing ten times as much within the reach of small businesses.

Commodore is already "not talking" about the Amiga II, a multi-user system that will address the needs of big business. There is currently no local area network capability for the Amiga, and a new computer using the 68020 would fit the bill nicely.

What this all adds up to is a color Mac with 512K RAM, MS-DOS capability, true multi-tasking, stereo sound, and an open architecture for under $2500.00. Commodore has committed itself to releasing all the technical specs and info that third-party developers need to create dynamite hardware and software for the Amiga. The expansion bus has full access to the 68000, and there are no design-imposed limits to the potential of the machine. As with all new computers, there will be a lag in the release of some software that you might want, but with access to the MS-DOS library, I imagine that most users will survive until applications that take full advantage of the Amiga's capabilities arrive. Commodore has come up with a winner. □

Specs For The Commodore Amiga

Suggested price without monitor: $1295. Availability is anticipated in September.

Microprocessor:	68000 Motorola
Speed:	7.15 MHz
Memory:	256K RAM
	192K ROM
Expansion:	Up to 512K internal
	Up to 8M external
Disk Capacity:	880K 3½ inch
Display:	RGB analog/digital
	Composite video
	RF modulated (TV)
Color:	4096 possible
Resolution:	320 × 200
	320 × 400
	640 × 200
	640 × 400
Keyboard:	89 keys
	Numeric keypad
Music:	4 channels, Stereo
I/O Ports:	RS232
	Centronics parallel
	External disk drive
	Controller ports (2)
	2 button mouse
	Joysticks
	Light pen
	Graphics tablet
	Optical scanner
	Game paddles
	Video, RF, RGB
	Graphics expansion bus
	System expansion bus
	Audio (2) stereo
	Keyboard
Speech synth:	Yes (text to voice)
	Male or Female voice
Software:	Amiga DOS
	Intuition overlay
	ABasic
	System tutorial
Additional languages available:	Pascal, Logo, C, Assembler
Additional peripherals available:	256K RAM pack
	Frame grabber (color)
	Digitizing tablet
	MIDI interface
	Hayes compatible modem
	3½ inch drive
	5¼ inch drive w/ MS-DOS R/W capability
	Hard disk w/tape backup
	1M RAM multi/function expansion board

HOT NEW PRODUCT

Does everything for Mail but lick the stamps

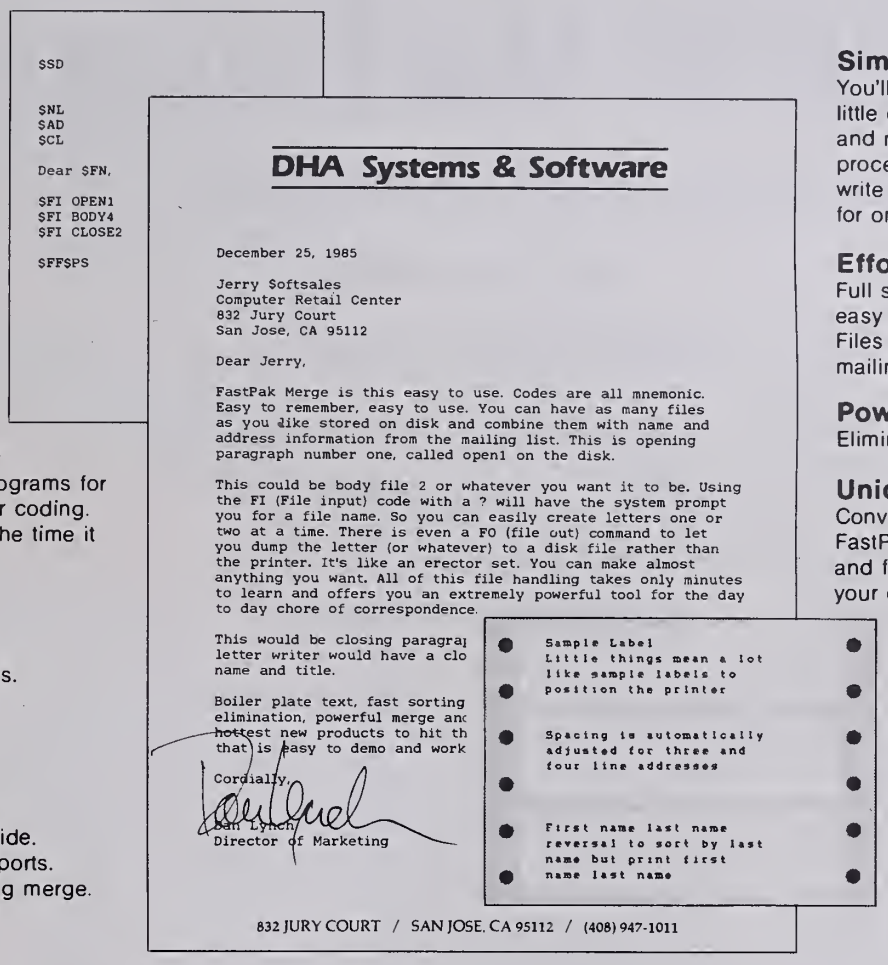
Quality Correspondence
FastPak Mail System beats anything you've seen for almost every mail application. From office correspondence to full blown mailing lists. Combine FastPak Mail with any word processor and you have an easy-to use, powerful text processing tool for any kind of correspondence.

Easy to use —
FastPak beats data-base programs for 90% of the mail applications. Especially for users who don't want to be programmers. Most users are amazed at how easy FastPak is to use.

FastPak beats the other mail merge programs for flexibility and simple, easy to remember coding. You can read our 16 page manual in the time it takes to find something in theirs.

Easy Data Entry
Full screen, fill in the blanks.
Preset format. No training. No problems.
No commas, quotes, or complications.
Just fast, easy, error correcting input.

Easy Labels and Reports
Preset format for 1 and 4 wide labels.
Flexible utility to run 2, 3, 4, or more wide.
Hit one key for standard labels and reports.
Custom reports any way you want using merge.



```
$SD

$NL
$AD
$CL

Dear $FN,

$FI OPEN1
$FI BODY4
$FI CLOSE2

$FFSPS
```

DHA Systems & Software

December 25, 1985

Jerry Softsales
Computer Retail Center
832 Jury Court
San Jose, CA 95112

Dear Jerry,

FastPak Merge is this easy to use. Codes are all mnemonic. Easy to remember, easy to use. You can have as many files as you like stored on disk and combine them with name and address information from the mailing list. This is opening paragraph number one, called open1 on the disk.

This could be body file 2 or whatever you want it to be. Using the FI (File input) code with a ? will have the system prompt you for a file name. So you can easily create letters one or two at a time. There is even a FO (file out) command to let you dump the letter (or whatever) to a disk file rather than the printer. It's like an erector set. You can make almost anything you want. All of this file handling takes only minutes to learn and offers you an extremely powerful tool for the day to day chore of correspondence.

This would be closing paragra
letter writer would have a clo
name and title.

Boiler plate text, fast sorting
elimination, powerful merge an
hottest new products to hit th
that is easy to demo and work

Cordially,

Dan Lynch
Director of Marketing

```
Sample Label
Little things mean a lot
like sample labels to
position the printer

Spacing is automatically
adjusted for three and
four line addresses

First name last name
reversal to sort by last
name but print first
name last name
```

832 JURY COURT / SAN JOSE, CA 95112 / (408) 947-1011

Simply Powerful Merge
You'll be amazed at what you can do with so little effort. In 5 minutes anyone can be writing and merging letters. Works with any word processor. Create boilerplate letters, file read and write commands, and much more. Fast enough for one letter — powerful enough for 5000.

Effortless Sort, Select, and Combine
Full sorting by alpha, zip, company, codes. Very easy to select records (almost any way you want). Files can be split and combined for special mailings. Fast and easy.

Powerful Purge
Eliminates duplicate names to save postage.

Unique conversion utility
Convert diff files and most other text formats to FastPak Mail. Simple and easy. Use the power and flexibility of our mail system without retyping your old lists.

Runs on any computer
IBM-PC, AT, and clones, MS-DOS, Victor 9000, DEC Rainbow, etc. CPM/80: Kaypro, Apple, Xerox, 8", and almost any 5¼ format. Non PC versions include easy installation for over 100 terminal types.

All this and Easy on the Budget too!

79.95

TO ORDER: Send check or money order for $79.95 plus $5.00 shipping/handling. California residents add sales tax. Phone orders call 408/947-1011. Visa/MC accepted.

Premium Software
Affordable Prices

DHA Systems & Software

832 JURY COURT / SAN JOSE, CA 95112 / (408) 947-1011

FastPak Mail System

10% OFF **INTRODUCTORY OFFER** 10% OFF

This coupon is worth $7.95 toward the purchase of DHA FastPak Mail System. FastPak Mail is the most complete mail program you can buy for anything close to the price. Includes MAIL, MERGE, SORT, SELECT, COMBINE, DUPELIST — even a program to convert your existing files. Easy to use option selectors — even better than menus.

Send this coupon along with $71.55 plus $5.00 shipping and handling to DHA Systems & Software. Phone orders call (408) 947-1011. Visa/MasterCard welcome. Offer expires November 31, 1985. Satisfaction is guaranteed.

(408) 947-1011 **DHA Systems & Software** 832 JURY COURT SAN JOSE, CA 95112

LIMITED TIME OFFER

ORDER NOW!

Who's Using Those CP/M Machines?

Hints For A Motley Assortment Of Users

By Robert D. Athey, Jr.

How do you use your computer? You bought it for a reason, and rationalized the purchase because of some software, be it word processing, financial, or even games. But now that you have it, what do you use it for? Do you consider yourself an expert?

What prompts the first question is a survey of the Bay Area Computer Users and Programmers (BAKUP) newsletter readers. Twenty-six percent of the 600+ subscribers responded to the written survey. Of those respondents, almost 80% use their Kaypros in a business. The most frequently used software was the word processing group, and usually that which came with the computer. Most users had a dot matrix printer. The more casual survey at the last BAKUP meeting showed similar results.

The biggest group of users seems to be the writers, and they are fairly heavily represented in meeting attendance. They come in two groups, those who do their writing for a school or university (assignments, theses, dissertations), and those who (attempt to) write for income (articles, books . . .). Interestingly, with the latter comes a fair amount of confirmation that editors will accept good clean dot matrix printing. The editors will send you a copy of their guidelines, and sometimes ideas on articles they need, if you request it. It is advisable for writers to print in bold-face throughout their manuscripts. Double spacing and good wide margins are also preferred by editors.

Editors comprise another large group of users. The *Daily Californian* (the UC newspaper at Berkeley) uses Kaypros. The *American Paint and Coatings Journal* finds an Osborne, a Kaypro and one other machine especially useful during the National Paint Show, when they put out daily editions of about 70 to 80 pages of newspaper sized glossy print. Some editors will advise writers to submit a disk with the manuscript, just to ease editing and transmission to the printer.

If the writer has a concern about the compatibility of word processing programs, there's an easy way to get around that problem. Go ahead and construct the manuscript with the word processing file in the *WordStar*, *Perfect Writer*, *NewWord*, *WordPlus*, or whatever. That way, the writer can make use of spelling checker programs, paragraph moving, search/replace, and all the neat tricks the word processing system does. Then, the file can be converted to an all-ASCII file by deleting all the special formatting and printing commands peculiar to the word processing system. The ASCII file can then be printed by use of several options, such as:

1. CP/M "TYPE" command, after the "control P" command to turn on the printer;
2. CP/M 2.2e "TYPER" command; or,
3. "NEWSWEEP" special print option "P".

This way, the disk manuscript can be read and manipulated by the editor with *any* word processing program. (Credit this idea to Nancy Mulvany, BAKUP Newsletter Editor.)

Make it easy for the editor to use your disk by converting the word processor based manuscript to ASCII. If you know what computer the editor uses, convert the format to that computer before you send it in by a program like *Uniform*, *Compat* or other interpreter.

There are other writers, too. The lawyers are a small but active segment of the user group. Word processing frequently-repeated standard text is a real help to the lawyer. Others who process contracts, such as real estate agents, find their personal computer usage increasing. One of the most effective uses of the word processor is the preparation of bids, or proposals for sale of goods or services to governments. Many of the proposals or bids require attachments, such as resumes of people involved or descriptions of the company. These resumes or company descriptions can be slightly modified to focus directly on the target topic of the bid or proposal to add to the attractiveness of the writers for an award.

I was surprised to find the number of scientists (physicists, dieticians, chemical engineers, chemists) who use the personal computer for reports, letters and such. This group also does scientific calculations occasionally and considers this function important, though word processing is their most frequently used application.

According to a recent BAKUP survey, nearly 80% of Kaypro owners use their machines in a business.

The surveys show a small number of people use their personal computers for bookkeeping functions. If you run a small business on a cash basis, as I do, the small computer can be quite adequate. Indeed, I know of a paint company that runs its books on an Apple. I don't know how they do that, but my business records for 1984 just barely fit the 64K buffer, and I have more line items this year. I adjusted to keeping my disk files on a quarterly basis for 1985. This also speeds up the operation of the spreadsheet program, as it has fewer recalculations to do. Don't forget to back up the files frequently. If you can turn off your recalculate function of the spreadsheet, do it for very large files before entering new data. You'll save a massive amount of time.

Now for a shift in emphasis! The State of California has opened a remote bulletin board on Air Pollution Research Information. The RBB is for use by the general public, under the sponsorship of the California Air Resources Board with no CARB charge for access. The RBB may be reached with your modem at 300 baud by calling (916) 324-6997 (the phone charges are your expense). The topics available are:

1. Summaries of current ARB research projects;
2. Abstracts of research projects completed within the last 12 months;
3. Public message bulletins on air pollution research-related announcements by users;
4. Electronic mail for ARB contract managers or for queries by users on research programs; and,
5. Announcements by ARB on decisions that were made by the Research Screening Committee or the Acid Deposition Scientific Advisory Committee and those that approve or fund ARB related research projects.

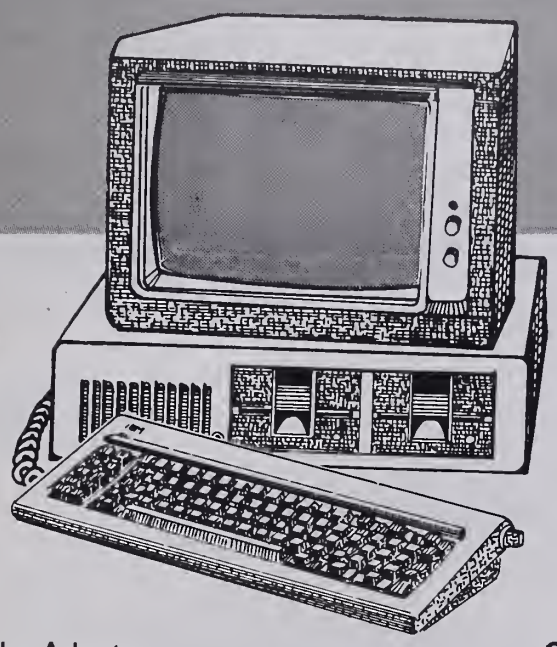
The times of operation of the RBB are essentially non-working hours (weekdays after 3:30 PM and before 9:00 AM, all 24 hours on weekends and holidays). For further information, dial up and type in "H", or write: Mr. Fereidun Feizollah, ARB Research Bulletin, Research Division, 1800 15th St., Sacramento, CA 95812.

That's a dandy way for air pollution information to be made public. What a source for up-to-date information for writers, broadcasters, students and researchers. I hope the water pollution, parks and health agencies set up something similar. □

Bob Athey has over 20 years of experience working on computers and runs his own company on chemical consulting and contract research. He can be reached through MicroTimes or at (415) 526-3541.

YES, WE HAVE IT

SERVICE, SUPPORT, SATISFACTION
ALL THIS WITH BEST PRICES



IBM®

Boards

IBM Enhanced Color Adapter	CALL
IBM Color Adapter	$240
IBM Mono Display Printer Adapter	$220
Hercules Color Display Printer Adapter	$180
Hercules Mono Graphics Display Printer Adapter	$315
Quad Board 64K	$245
AST Six Pack 64K	$245
AST Advantage Expansion Board for AT w/128K	$475
Paradise Modular Graphics Adapter	$285
Tecmar Captain	CALL
Tecmar Graphics Master	CALL
Set of RAM Chips 64K	$25
8087-3 Co-Processor	$150
80287 Co-Processor for AT	$350

Floppies

Teac ½ Ht. 360K	$110
IBM 360K full Ht.	$150
Floppy for AT	CALL

Hard Disks

10 MB Microscience internal complete	$575
20 MB Microscience internal complete	$775
20 MB Hard Disk for AT	CALL
40 MB/60MB with Tape Back-Up	CALL

Software

Lotus 123	$275
Symphony	$390
Word Perfect 4.0	$290
Framework	$350
D. Base III	$340
Multimate	$275
Word Star 2000	$260
D.O.S. 2.1	$ 60
D.O.S. 3.0	$ 65

And all the other software with Best Prices

Computers

IBM PC 256K, 1 IBM Drive	CALL
IBM PC 256K 2 ½ Ht. Drive	CALL
IBM PC 256K 2 ½ Ht. Drive 10 MB Hard Disk	$2145
IBM PC 256K 2 ½ Ht. Drive 20 MB Hard Disk	$2500
IBM PC XT 1 IBM Floppy 10 MB Hard Disk	$2400
IBM PC XT 1 IBM Floppy 20 MB Hard Disk	$2800
IBM AT 512K 1.2 Mega Floppy 20 MB Hard Disk Serial Port	$4449
Compaq Desk Pro 1 128K 1 Dr	$1700
Compaq Desk Pro 2 128K 2 Dr	$1900
Compaq Portable 128K 1 Dr	$1750
Compaq Portable 256K 2 Dr	$1950
Compaq Portable plus 1 Fl. 10MB HD	$3200
Compaq 286	Call

Printers

Okidata 192	$385
Okidata 192	$585
Epson LX80	$265
Epson RX80 F/T	$280
Epson FX85	$385
Epson 185	$585
Epson LQ 1500 w/interface & tractor	$1050
Juki 6100 P.	$390
Juki 6300 P.	$690
Toshiba P. 1340	$580
Toshiba P. 1351	$1280
Alpha Pro letter quality	$320

Monitors

IBM Enhanced Color Monitor	CALL
IBM Color Monitor	$545
IBM Mono Monitor	$245
Princeton SR12 Color Monitor	$560
Princeton HX12 Color Monitor	$450
Princeton MHX12 Mono Monitor	$180
Quimax Color Monitor	$460
Quadram Mono Monitor	$175
Amdek 310A Mono Monitor	$160

Leasing, Financing Available with Professional Guidance

TEK COMPUTERS

2740 El Camino Real
Santa Clara, CA 95051

master charge

VISA

(408) 296-0455

INSIDE CA. 800- 824-6360
OUTSIDE CA. 800 - 225-5227

EXCEL:

Microsoft Takes The Spreadsheet A Step Further

By Barbara Leone

Excel, the much-talked-about spreadsheet and graphics program to be released in September for the Macintosh, is everything Microsoft said it would be and more. I've been working with a beta test release of the product, and even with this test version I was overwhelmingly impressed.

If this program doesn't sell Macintoshes for Apple, nothing will. For all of those *Lotus 1-2-3* users who wanted to throw away their IBMs and use a Macintosh, but couldn't pry themselves away from all of those old *Lotus 1-2-3* files, there's good news—*Excel* has two way file compatibility with *Lotus 1-2-3!* The only major limitations are with the conversion of *1-2-3* macros to *Excel* macros and *1-2-3* graphs to *Excel* charts. Cell properties do convert: format, protection status, and formulas or values and names.

The *Excel* spreadsheet is 256 columns × 16,384 rows; it is amazingly fast, and has the most advanced problem-solving capabilities of any spreadsheets I have seen to date for a microcomputer. The ease of use in creating macros cannot be compared on any other computer.

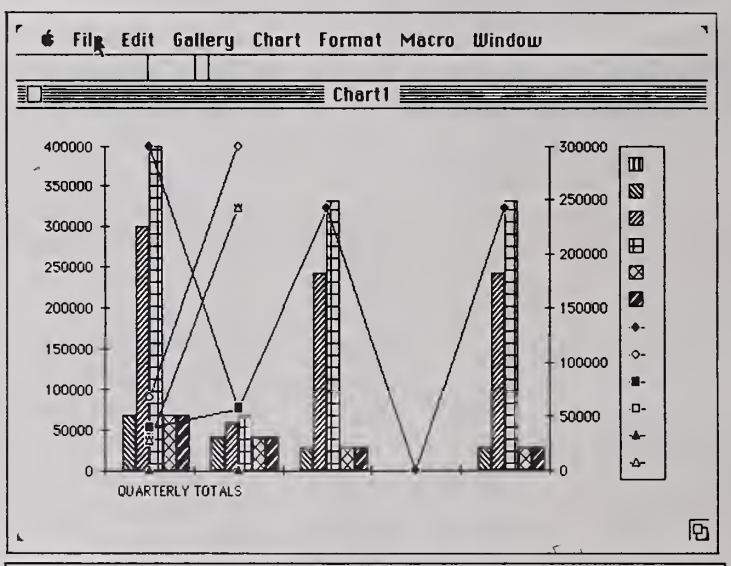
Presentation graphics using spreadsheet data are as easy as pointing and clicking the mouse. The charting program allows for 42 pre-designed charts. Several windows can be displayed on the screen at one time, allowing the user to watch the effect on a chart while changing the information on an associated spreadsheet.

Formatting the spreadsheet, or "worksheet" as Microsoft likes to call it, comes from simple menu commands. It allows for variable fonts and font sizes, plus bold and italic options, for individual cells or regions. There are five border styles for individual cells or regions, 19 pre-designed number formats, including date, time of day, currency, percent, and decimal as well as user definable number formatting.

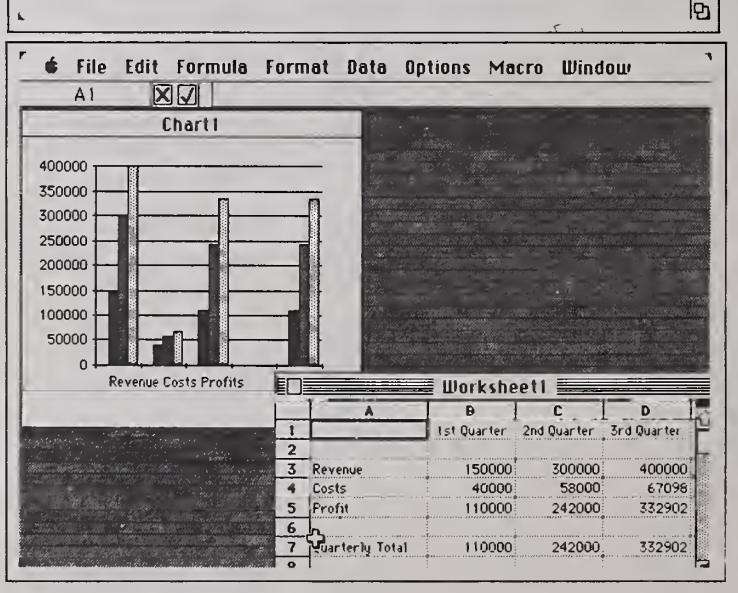
Any part of a worksheet can be used for database management. No new commands are needed to run the worksheet as a database, and full information management capability is provided for the query, sorting and extracting of data.

An enormous number of functions are built in for the user to choose from when building formulas. These include not only the mathematical and statistical functions but special functions for the database, trigonometric functions, logical, text, and financial functions like Net Present Value (NPV) for real estate calculations and (RATE) Rate returned on investment; there are also date functions and other special purpose functions such as LOOKUP and INDEX used with arrays. The unique array-handling abilities of *Excel* make it an outstanding tool for complex analysis-like linear programming. With *Excel*, a formula can perform calculations on multiple values simultaneously or return multiple values from a single calculation.

The most powerful feature of all is the macro language. For the most serious spreadsheet users the macro language gives the capability of writing automated applications, automated templates and user-defined functions. It is so powerful, in fact, that if the user so chooses he/she can create complete custom applications that automatically build a spreadsheet or chart while prompting the user for input.



***Excel*'s charting program allows for 42 pre-designed charts to suit a variety of needs.**



Several windows can be displayed on the screen at a time, allowing the user to watch the effect on a chart while changing the data on the associated spreadsheet.

Spreadsheets for Macintosh are currently flooding the market, and I have had the opportunity to examine the most well publicized, such as the *Jazz*, *Crunch*, *Quartet*, and *Multiplan*. As far as I'm concerned, no spreadsheet for the Macintosh or the IBM compares to this one for overall speed, power, and flexibility.

If you are one of those serious spreadsheet users that was patiently awaiting the release of *Jazz* to get down to business with your spreadsheets, look again. *Jazz* does not even come close to this spreadsheet.

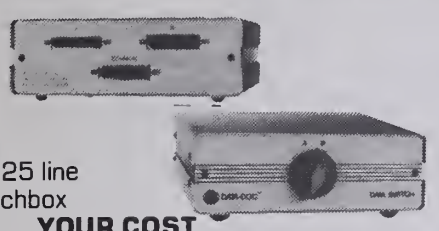
More good news! If you already have *Multiplan* and *Chart*, you're in luck, because Microsoft is offering a $100.00 upgrade to *Excel* ($200.00 if all you own is *Multiplan*). The program retails for $395 and will be bundled with Switcher, allowing the user to switch quickly and easily between other applications such as *Microsoft Word* or *MacWrite*. □

Barbara Leone owns and operates Microsource Consulting Services in Orinda, California. She works with businesses of all sizes, training and consulting on the Macintosh and IBM personal computers. For more information call: (415) 254-4999.

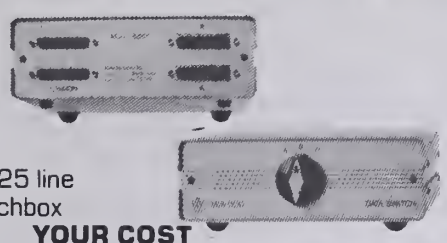
WE JUST ELIMINATED THE MIDDLE MAN!

SERIAL DATALINE SWITCHBOXES

These switchboxes are used to connect more than one peripheral device to a CPU or vice versa where a 25 line (DB-25) connection is desired.



AB25-2
2 position 25 line
serial switchbox
LIST 109.95 **YOUR COST 79.95**

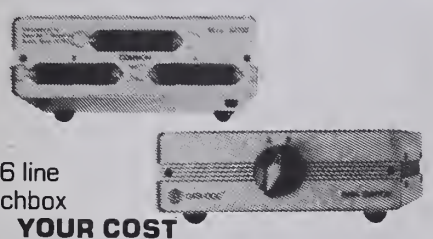


AB25-3
3 position 25 line
serial switchbox
LIST 149.95 **YOUR COST 119.95**

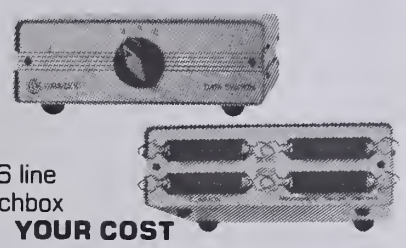
AB25-4
4 position 25 line
serial switchbox
LIST 189.95 **YOUR COST 126.95**

PARALLEL DATALINE SWITCHBOXES

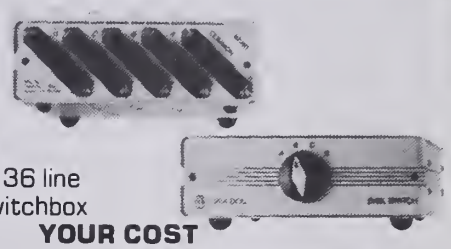
These switchboxes are used to connect more than one peripheral device to a CPU or vice versa where a 36 line (centronics) connection is desired.



AB36-2
2 position 36 line
parallel switchbox
LIST 149.95 **YOUR COST 109.95**



AB36-3
3 position 36 line
parallel switchbox
LIST 159.95 **YOUR COST 127.95**

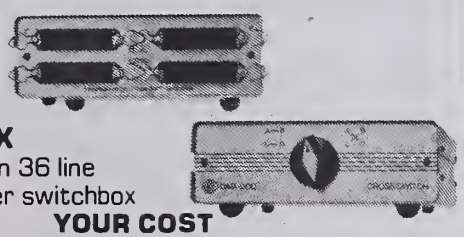


AB36-4
4 position 36 line
parallel switchbox
LIST 199.95 **YOUR COST 145.95**

CROSSOVER SWITCHBOXES

These switchboxes allow the connection of two printers or other peripherals to two CPU's and allow them to be switched.

AB25-X
2 position 25 line
crossover switchbox
LIST 174.95 **YOUR COST 139.95**



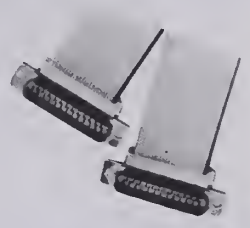
AB36-X
2 position 36 line
crossover switchbox
LIST 189.95 **YOUR COST 149.95**

RIBBON CABLE ASSEMBLIES

These ribbon cable assemblies may be used with the above switchboxes for interconnecting your devices.

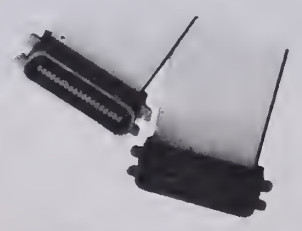
RS-232 DB-25 RIBBON CABLE ASSEMBLIES

model #	description	price
25M-25M	— male to male	**10.50 + .50 per foot**
25M-25F	— male to female	**11.10 + .50 per foot**
25F-25F	— female to female	**11.30 + .50 per foot**



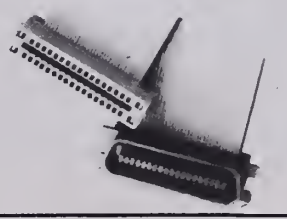
CENTRONICS 36 PIN RIBBON CABLE ASSEMBLIES

model #	description	price
36M-36M	— male to male	**7.00 + .72 per foot**
36M-36F	— male to female	**10.40 + .72 per foot**
36F-36F	— female to female	**15.80 + .72 per foot**



TRS-80 PARALLEL PRINTER RIBBON CABLE ASSEMBLY

model #	description	price
36M-34E	— 34 pin edge card to 36 pin male	**6.45 + .68 per foot**



IBM PC/XT CABLES & ACCESSORIES

PARALLEL PRINTER CABLES

6 foot	**19.95**
10 foot	**24.95**
15 foot	**29.95**
20 foot	**34.95**
25 foot	**39.95**

KEYBOARD EXTENSION CABLES

10 foot	**8.95**

MONITOR EXTENSION CABLES

10 foot	**8.95**

HARD DRIVE CABLE ASSEMBLIES

internal	**11.75**
external	**14.95**

DUAL FLOPPY DRIVE CABLE ASSEMBLIES

internal	**10.95**
external	**12.95**

POWER CORDS 3.95

RS-232 DB-25 GENDER CHANGERS

AGC-M	male	**9.95**
AGC-F	female	**9.95**

ALTEX ELECTRONICS

10731 GULFDALE
SAN ANTONIO, TX 78216

ORDER TOLL FREE
800-531-5369
512-828-0503

TERMS: MC/VISA/AMEX/C.O.D./CHECK/M.O. Freight prepaid on all switchboxes and orders above 50.00. For orders under 50.00 add 5.00 shipping and handling. Add 1.90 for C.O.D. charge. All orders received by 3 p.m. CDT will be shipped same day. UPS Next Day and Second Day Air Services available. Your satisfaction is guaranteed on all merchandise, or return for a full refund.

New Products For The C64

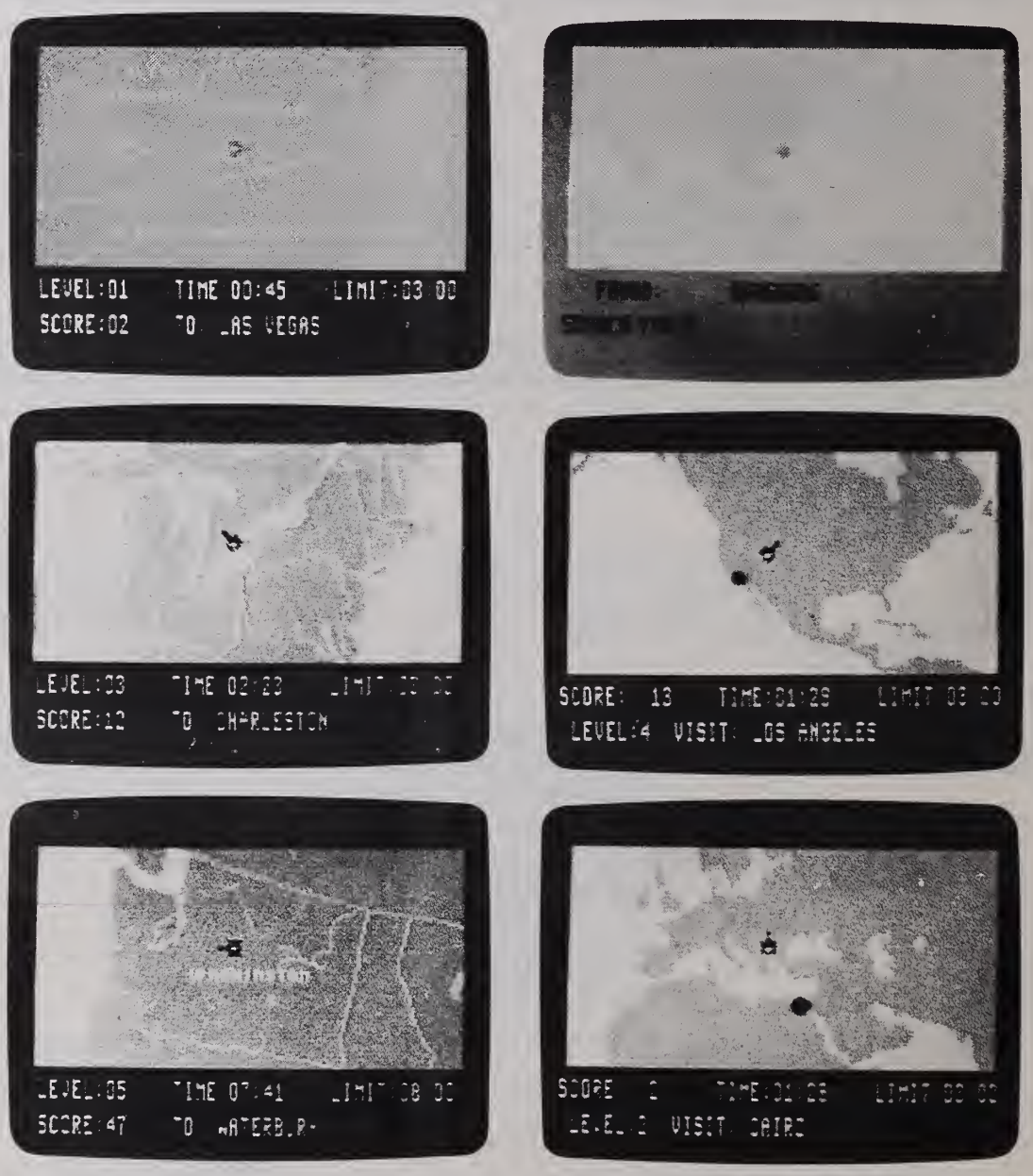
By Matthew Leeds

Let's start this month by looking at some new products for the C64. A newcomer to the United States, Radarsoft, is introducing two products: *RadarBasic 50K*, and *MAPS USA*. *RadarBasic* is a cartridge-based extension to Commodore BASIC that adds a few commands, and increases the available programming space for BASIC to 50K. The added commands are nothing special. A disk wedge, a cassette-based turbo loader, and a renumber utility are the extent of the additions. The main item of interest is the extended space for programming in BASIC. This could allow for development of more powerful programs without the need to learn assembly language. The cartridge works by switching out the kernel and using its own compressed BASIC. However, the documentation is skimpy at best. The distributor, Adam, Cobb & King, has indicated interest in providing additional support and information, and has said that the final release package will include a technical support telephone number, a programming hints sheet, and possibly a full manual.

Radarsoft's other product is *MAPS USA*. This is an interactive game/tutorial that uses high-res screens showing the United States. One general survey map, and five regional maps, each using smooth scrolling graphics, allow you to locate over 5000 cities, rivers, mountains, states, etc. You can request the location of a place, and the program will scroll to its location. There are also several quiz modes, with questions on state capitals, cities and other geographic information. Finally, there is a game. Using a helicopter, you must fly to a variety of cities within a time limit. This is an excellent learning tool for children, as it combines an interactive query capability with an entertaining game. Radarsoft will be releasing other packages in the MAPS series: World, and Europe, anticipated for the end of August.

A product still under development by Starpoint Software, code named Orion, is a digitizing frame-grabber. Using any video source (TV, video camera, laser disk, VCR, or computer), it memorizes a screen in 1/60 of a second. This image is a full bit map, not character blocks like some other digitizers for the Commodore. It is a black-and-white image with no gray tones. The hardware is fully developed, according to Bruce Hammond of Starpoint, and release is waiting on the development of suitable software. Some of the planned software to be released with the frame-grabber will allow for multiple scans, screen dumps, painting in full color, and file conversion to and from popular graphics packages. Although it is too soon to predict the selling price, it is estimated to be around $150. Look for availability around Christmas.

An inside source at Info Designs has told me that they are working on a voice-controlled word processor. That's right, you can just say "take a letter" and it will convert your dictation to text. The final product will include some kind of microphone, other hardware, and software. No price has been set, and projected availability is in 1986. Info Designs is a leader in expert systems for home computers, and just might be able to pull this off.

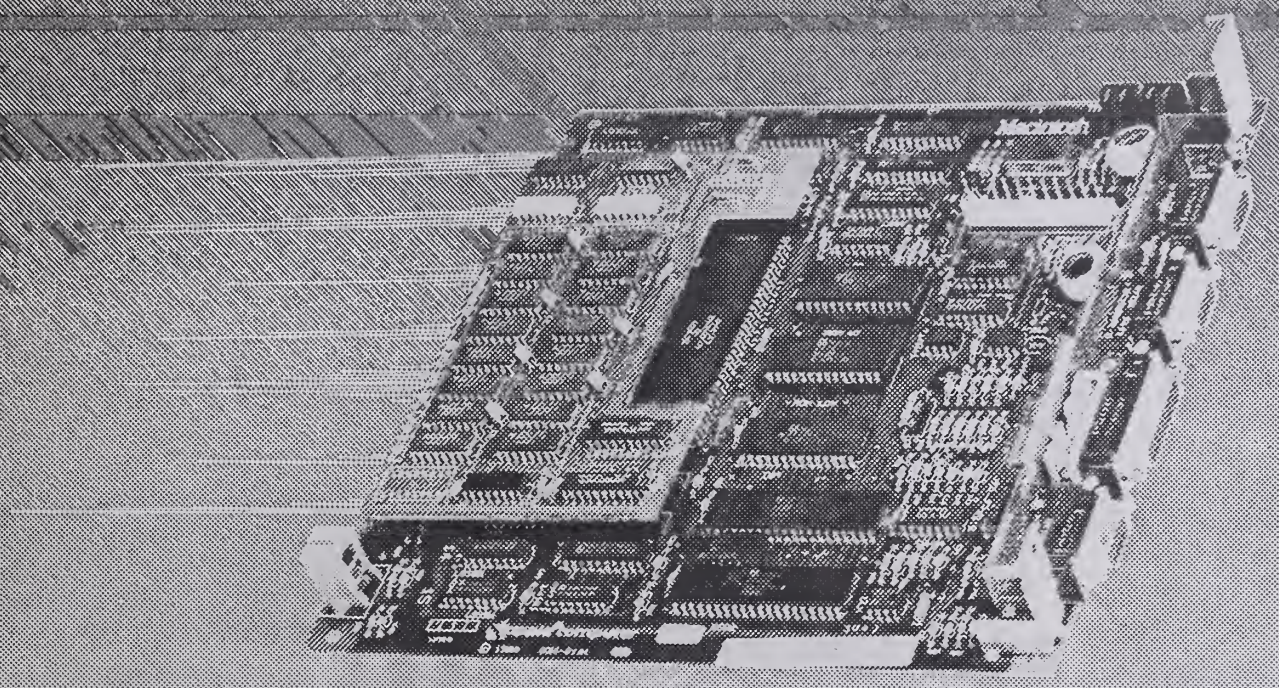


Radarsoft's *MAPS* series (*USA*, left, and *WORLD*, right) provides an interactive game/tutorial format for learning geography.

In the grab bag comes a response to my comments on user-supported software. Victory Software Corporation believes the computer games software market is dying. The company cites over-pricing, no use before buying, and lack of innovation as some reasons for the market's depressed state. They are supplying an avenue for the distribution of user-supported software. I received their Volume 2 disk, which contained a variety of games: arcade, adventure, and text. Also included was an excellent financial loan analyzer. The disk is non-copy-protected, and Victory encourages you to duplicate and distribute the disk. Donations are requested if you like what you receive, as are comments and suggestions. They are also looking for new programs. The software is fairly good, and with support could get even better.

For further information, contact: Adam, Cobb & King, Inc., 655 John Muir Drive, E411, San Francisco, CA 94132, (415) 239-5357; Starpoint Software, Star Route 10, Gazelle, CA 96034, (916) 435-2371; Info Designs, Inc., 445 Enterprise Court, Bloomfield Hills, MI 48013, (800) 445-INFO; Victory Software Corporation, 1410 Russell Road, Paoli, PA 19301, (215) 296-3787. □

A Faster Mac...



Break the 512K Memory Barrier with MacMEGABYTES™

Memory Expansion Board designed by Beck-Tech.

MacMEGABYTES™ brings your 128K or 512K Macintosh up to a full 1024K of RAM. Having one megabyte of memory in your Mac provides the advantage of running all Macintosh programs that access a floppy or hard disk at much higher speeds. Now you can run Jazz™, Word™, MacWrite™, MacPaint™, Multiplan™, Crunch™ and virtually any other Mac software lightning fast without delays.

MacMEGABYTES™ ROM Enhancement. You can run your favorite software with Switcher™ in one megabyte of continuous memory (instead of 512K memory split) with the new MacMEGABYTES™ ROM Enhancement.

MacMEGABYTES™ is a cool operator requiring no fan and drawing so little power that you can operate your peripherals safely within the limits of Mac's power supply.

MacMEGABYTES™ comes complete with RAM disk software configurable to 800K, a 90 day warranty and MacCARE™ -an optional one to three year service contract that covers your entire Macintosh computer.

Best of all, **MacMEGABYTES™** is backed by MICAH's 8 years service and support experience.

John C. Dvorak
San Francisco Examiner
"I loaded up a 128K Mac with this upgrade and found it bug-free. I recommend it. The typical use will be for a full-blown 512K Mac with a 512K Ram disk (main memory that thinks it's a disk drive) to speed up all aspects of the machine's operation."

If you're interested in having a truly faster and more powerful Mac, call MICAH today for more information and for the name of your nearest authorized MICAH-MacMEGABYTES™ dealer.
(415)331-6422 Telex: TWX 510 600 1221

Suggested Retail: 128K—-$849. 512K—-$549.
ROM Enhancement———-$149.

MICAH
15 Princess St., Sausalito, CA 94965
(415) 331-6422

Communications For A Small Planet

By Brock N. Meeks

"The Medium is the Message," because it is the medium that shapes and controls the search and form of human associations and action.

— Marshall McLuhan

Good communication is as stimulating as black coffee, and just as hard to sleep after.

— Anne Morrow Lindbergh

The scope of telecommunications is worldwide, creating a fertile environment for the birth of a global community. Free from the constraints of time and geographic boundaries, microcomputer-based telecommunications make the world smaller for each of us.

In San Diego a group of university professors communicate daily with associates in six foreign countries, via an elaborate maze of electronic networks. They talk about issues vital to the understanding of "how culture influences thinking."

A San Francisco executive walks into a Porsche dealer wanting to buy a custom Turbo-Carrera. He doesn't even know if the car exists. The Porsche dealer sits down in front of a microcomputer and taps into Porsche's "car-finder" satellite-based communications network (which lists the location of every car Porsche rolls off the assembly line). He checks an online worldwide database of Porsche dealers and finds the car in Miami Beach. Mr. Executive gets his car in six days.

A yuppie couple (after a dinner of Lean Cuisine breaded veal) dials into SKI-NET, a free access database that contains information on every ski resort in the world. They plan their next ski trip by comparing the resorts in Vermont with those of Tahoe.

A fourteen-year-old junior high school student logs onto the "Astronomer's BBS" to enter his latest observations — gleaned from a backyard telescope perusal of the heavens. He notes an entry from a user in Panama and downloads it to his disk. An hour later an astronomer from the National Astronomy and Ionosphere Center logs in and downloads an entry left by a fourteen-year-old junior high school student.

Over a period of four months an Alaskan lawyer falls in love with an Atlanta, Georgia woman he has never met. Instead they carry on an amorous electronic love affair (love in the phosphor), using the electronic mail facility of The Source (an information utility). Tonight he will log on to read his electronic mail, and find a message from her telling him that she is black and a paraplegic.

Telecommunication via microcomputer and modem is a true frontier, with uncharted explorable "territory" and adventure around every corner.

He sends her a plane ticket to Alaska and marries her three weeks later.

Illustrations like those above are not unique. Telecommunications will change what people do worst: communicate. Communication involves the transferring of information from one person to another, in some manner. And in today's "instant everything" society we don't always have time to communicate in an effective way. Telecommunications gives us the availability of time: a commodity beyond price.

Yes, I know the skeptics will scoff, "Electronic communications will never replace face-to-face human interaction." Let's hope not, but it can improve on those face-to-face meetings.

Typical face-to-face meetings require immediate responses, and bring the entire gamut of psychological foreplay to bear on even the most innocent of conversations. Telecommunication augments those conversations.

Corporate board room meetings can now take place via computer conferencing systems. People intimidated by the presence of corporate "power" personalities can now think through their responses, shape and mold their ideas, without the pressure of board room power plays. They simply log into a computer conference and type in their thoughts.

Scientists, buried all day in the give-and-take of a laboratory, can relax and trade opinions and comments with scientists from all over the world via an electronic message system.

Learning disabled students, once segregated from traditional learning environments, take regular college courses through an "electronic university." They are able to take as much time as they need to respond to the professor's questions — suddenly their "handicap" is transparent.

Telecommunication via microcomputer and modem is a true frontier, with uncharted explorable "territory" and adventure around every cursor. "Electronic activists" monitor the growing number of legislative pressures seeking to regulate the online community. An obvious "majority" dominates activity in the online community — potentially "locking out" a large segment of the population. (Tell me there's no "adventure" when a community goes online with public terminals, such as Berkeley's "Community Memory" project.) Then there are the "larger" questions.

The social and cultural implications of the medium need examining. Who owns all this information? What do you do about "information overload"? How do you insure privacy? Do electronic communications deserve the same freedoms as the spoken or printed word? (The California legislature has a bill before it right now that would guarantee the "electronic freedom of speech.") Who is going to answer these questions?

We are. As charter members of the Information Age, we are setting the ground rules for generations of telecommunicators. When was the last time you had this kind of an opportunity to affect the future?

In this column you and I will travel through this global community. I'll keep you informed, amused, and up-to-date about what's happening in the world of telecommunications, and how to become involved in it. Sparing you the "techno-jargon" of some of my colleagues, I'll share with you the "how-to's" of this Information Age cultural phenomenon.

If you have any questions (yes, I see that cursor), I welcome the opportunity to answer them. You can reach me in care of **MicroTimes** or through the following electronic address:
The Source's Participate section as: Brock Meeks; CompuServe: 70366,1355;
MCI Mail: BMEEKS;
ARPANET: BROCK@UCSD;
USENET: inhp4!sdcsvax!crash!brock.

So, until next month, I'll see you here. □

20% to 75% OFF THE SUGGESTED RETAIL ON ALL IBM, APPLE, MACINTOSH, ATARI AND COMMODORE SOFTWARE IN STOCK!

Call TOLL-FREE 800-223-8327

DISKETTES

	retail price	our price
5¼" Diskettes		
Maxell, Verbatim* SS/DD Box of 10	$40.00	**$19.95**
Maxell, Verbatim* DS/DD Box of 10	$50.00	**$23.95**
3½" Diskettes		
Sony	$60.00	**$26.00**
Maxell, Verbatim Memorex	$60.00	**$35.00**
Generic 3½"	$60.00	**$22.00**
5¼" Diskettes	retail price	our price
Xidex SS/DD Box of 10	$40.00	**$14.95**
Xidex DS/DD Box of 10	$50.00	**$19.95**

BriteStar™

BRITESTAR SPECTRUM PAK **$17.95**
Color Paper with Matching Envelope and Clear Labels—Red Blue & Gold

BRITESTAR COLOR RIBBONS
Available in Red, Blue, Green, Purple, Brown, Yellow, Orange, Silver
(Epson/Imagewriter) **$8.95**

MACINTOSH SOFTWARE SPECIALS

SARGON III (HAYDEN)	**$32.00**
VIDEO WORKS (HAYDEN)	**$75.00**
HAYDEN SPELLER	**$60.00**
COPY II MAC (CENTRAL POINT)	**$28.00**
SPACE SHUTTLE (AEGIS)	**$34.95**
CONCERTWARE PLUS (GREAT WAVE)	**$51.00**
TURBO CHARGER (NEVIN)	**$75.00**
CRUNCH (PALADIN)	**$177.00**
MAC ADVANTAGE PASCAL (SOFTECH)	**$220.00**

SPRINGBOARD

	retail price	our price
NEWS ROOM IBM PC	$49.95	**$39.95**
CLIP ART VOL I IBM PC	$28.95	**$23.95**

MICROSOFT
The High Performance Software

Business Pack for MacIntosh includes Word, File, Chart and Multiplan
High Performance Business Software — $595 **$390**

WORD For IBM PC — $375.00 **$275.00**

MINDSCAPE INC

HALLEY'S PROJECT (C-64) — $39.95 **$31.95**

Imsi SOFTWARE PUBLISHERS

PC MOUSE With PC PAINT BRUSH — $220.00 **$145.00**

Generic Diskettes

5¼" Generic Diskettes SS/DD (Box of 25)	**$24.95**
5¼" Generic Diskettes DS/DD (Box of 25)	**$29.95**

We are the Bay Area's most complete software outlet with hundreds of software disks and cartridges in stock and thousands more available. Come and see our line of *software and peripherals* for Macintosh*, Apple*, IBM*, and Commodore*. If we don't have it, we can get it fast.

SOFTWARE SOLUTIONS

[1]For items in stock only. 11185 San Pablo Ave., El Cerrito 94530 **(415) 237-5257**

Hours: Monday through Saturday 10:00 a.m. to 6:00 p.m. **For Orders Call 800-223-8327**

*Trademarks of respective manufacturers.

Indexing dBase III Databases

By Bill Amatneek

Indexing is one of *dBase III*'s most useful functions, but many beginners are intimidated by it. Here are some hints for getting comfortable with the procedures.

Indexing is a subject dear to most *dBase* users' hearts. It is the approved way of re-ordering the records of a database, and yet some beginners have problems getting friendly with indexing. Let's take a short tour of indexing with this database example which you can key in at your computer. Get into *dBase III* as you usually do, and

.SET TALK OFF
.SET SAFETY OFF
.SET HELP OFF
.SET DEFAULT TO b: (or .SET DEFAULT TO c: for hard disk users)
and
.CREATE example
to look like this:

B:example.dbf Bytes remaining: 3983
Fields defined: 3

	field name	type	width	dec
1	NAME	Char/text	7	
2	NUMBER	Numeric	2	0
3	DATE1	Date	8	
4		Char/text		

When your cursor is on line 4, hit <**Ctrl**> <**End**> to save your work. When prompted to: **'Hit RETURN to confirm — any other key to resume,"** hit <**RETURN**> again. When prompted to: **"Input data records now? (Y/N),"** enter a **N** for No, and then type in:

.APPEND

Add these 5 records to the database:

Record No. 1
NAME Zilch
NUMBER 0
DATE1 01/01/01
Record No. 2
NAME Able
NUMBER 99
DATE1 12/31/99
Record No. 3
NAME Smith
NUMBER 50
DATE1 01/31/85
Record No. 4
NAME Smith
NUMBER 1
DATE1 01/01/85
Record No. 5
NAME Smith
NUMBER 50
DATE1 12/31/84

Bill Amatneek will teach dBase III Programming classes the week of September 16 – 22, 1985 at the Mill Valley Howard Johnson's. He can be contacted at 415/388-8024 for more information.

When you arrive at Record No. 6, exit from the append mode by pressing <**RETURN**>. Then:

.USE example
.LIST

Record #	NAME	NUMBER	DATE1
1	Zilch	0	01/01/01
2	Able	99	12/31/99
3	Smith	50	01/31/85
4	Smith	1	01/01/85
5	Smith	50	12/31/84

If you were asked to re-order the records in the database above, your first question would be "On what basis do you want them re-ordered?" We can re-order the records based on the data in any field, in our case: **NAME, NUMBER** or **DATE.**

(The order of re-ordering is: Numbers first, then lowercase letters, then uppercase letters, That is, 0 – 9, A – Z, a – z. The various other keyboard signs and squiggles are dispersed among these three groups, logically, I'm sure.)

SIMPLE INDEXING

INDEX ON is a command which will make it appear that the records in a database have been re-ordered on the basis of the data in a field that you indicate. The Syntax is:

INDEX ON fieldname TO indexfilename

You supply the **"fieldname"** from one in the file you have open. And you make up the 8-letter **"indexfilename,"** to reflect in one short word what the index is about. Sometimes we use the name of the field we are indexing on for the indexfilename. *dBase* tacks a **.ndx** extension on to the end of your indexfilename, and saves it as an Index File.

An indexed database behaves as though its records have been physically re-ordered. The indexing process is transparent to the user; only the out-of-sequence **Record #**'s seen during a **.LIST** of an indexed file reveal that the file has been indexed:

.INDEX ON name TO name
.LIST name

Record #	name
2	Able
3	Smith
4	Smith
5	Smith
1	Zilch

Indexing is so simple — once it's done, it's done — that some people, I think, try to make more of it than there is.

Notice that a by-product of indexing is that identically spelled data appear together in groups — like our Smiths, above. This will be of help to us when we wish to **.FIND** certain data and **.LIST WHILE** that data is grouped in the file.

Only Character, Numeric and Date type fields are available for indexing. A simple index, one involving only one key field, is quite straightforward. We've already done a simple Character field index. Here are the numeric and data types:

.INDEX ON number TO number
.LIST number

Record #	number
1	0
4	1
3	50
5	50
2	99

.INDEX ON date1 TO date
.LIST date

Record #	date1
1	01/01/01
5	12/31/84
4	01/01/85
3	01/31/85
2	12/31/99

continued on page 102

SYSTEMS & HARDWARE FOR THE VARs

Transwest Computer Products is both a manufacturer of the PC/XT and a supplier of hardware to enhance the IBM PC/XT installed base. We would like to help you with the following product line:

IBM PC/XT (Look-a-like)

• 640K Ram • 5 Rom Bios • 7 Expansion Slots • 2 Serial • 2 Parallel Ports • FDD (2) Controllers • Clock Calendar • Game Port • Cables • 130W Power Supply • 2 FDD • Case • Keyboard

$1200

(Dealer inquiries invited)

Options: Seagate 10/20 MB, color adaptor external drives, Epson printers, color RGB monitors or monochrome CRT's.

VAR PRODUCTS

• Hard Disk Drives w/Controller	10 MB	**$400.00**
	20 MB	**$500.00**
• Epson Printers		**CALL**
• Modems	300/1200 Baud	
• TW 6 Pak	64K	**$200.00**
• Clock Calendar	384K	**$275.00**
• Serial/Parallel Port		
• Game Port		
• Ram Disk		
• P-Spool		
• 1 Year Warranty		

• Teac	55B	**$85.00**
• Floppy Diskettes	SSDD (ten pack)	**$7.50**
	DSDD (ten pack)	**$9.50**
• Cables	2 pack for HDD/CTR	**$10.00** (set)
• RGB Monitors		**$325.00**

COMPONENTS

• 64K Dram • 256K Dram • 80287 • 8087 • WD 1010APL-02 • WD11C00-13 • WD2797

TRANSWEST COMPUTER PRODUCTS INC.

(408) 292-4500 (Open Saturdays)

Selecting A Business Computer

By L.K. Engelhart

For many business people, the question of choosing a computer seems like buying any other piece of business equipment, but they admit that in some respects it is very different. Computers used in business cannot be considered simple appliances. Unlike other business tools, they are adaptable to so many needs that understanding a computer's role in a given business depends on first addressing those needs. Once needs are clearly established and the uses for the computer decided, a computer can be selected like any other piece of equipment.

Business owners often express reasonable doubts concerning the usefulness of computer equipment to their operations. However reasonable these doubts may be, I believe that businesses with information-related problems will benefit from using computers. I also believe it is essential to understand the needs and decide how they are going to be met before spending any money on computers.

People ask, "What kind of computer should I buy?" My response is pretty consistent, "Pick a computer the same way you would pick an automobile." In saying that, I'm exercising some professional license. The analogy is, of course, not perfect. Let's take a real look at what's entailed in selecting a car and see what the similarities and differences are. Most people have bought a car or two and, recalling that process, they are a little uncomfortable with my analogy. They know what a car can do, and when they buy one, there is a clear and well-established need.

Buying a computer is just not the same, particularly for a business. Most businesses can ill afford an investment or monthly payment that does not contribute to the profitability of the enterprise. When a business buys a vehicle, it is usually pretty easy to tell how much more money can be made as a result. In some cases you might not even be able to do business without it. In comparison, we know we can operate a business successfully without a computer. So we have to ask *why* our business would want one.

When we ask why in the case of the computer, we distinguish that decision from the much less complicated one of picking the car we want. What's the difference? We know computers are useful for many different things. In fact, computers can do so many things that buying one makes no sense unless we have defined what we intend to use it for. With most tools, we look at the problem from the perspective of the tool. With computers we look at the tool from the perspective of the problem.

Many people are repelled by the notion that computers are like the human brain. Although there is little support for this notion, there is one respect in which a computer is much like a brain. Both are powerful by virtue of being general-purpose mechanisms able to solve any kind of a problem. However, because the computer must be programmed to do this, it can never be more than an assistant to the human brain. It happens to be the most capable assistant we have, but we are very much dependent on many other people to make it work.

It's really no mystery what a computer does. It's really not much different from a lawn mower. We know the lawn has to be cut. Logically this means cutting each blade of grass to a uniform length. We think that slicing the grass is better than tearing it and we would like to slice a whole bunch of blades at a time. It's logical. So we design ourselves a contraption that satisfies this logical requirement in the most economical way, considering the available technology. Computers are simply contraptions designed to do logical things with information.

Information is something that people use quite naturally. We hardly ever wonder at the complexity of the systems we have created to deal with it — education and journalism, for example. Computers, however, provide a tool for using information which has so much potential that all of our information systems are being redesigned to use this new tool. There are economics involved, of course, and until recently only the affluent could afford these sophisticated devices.

You too will have to be affluent if you intend to design and develop your own applications to support a small business. Fortunately, though, many of the most common information needs of businesses have been reduced to logical algorithms which can be accomplished on affordable small computers. There are many versions of accounts receivable, payroll, general ledger, inventory accounting and other traditional business information systems, some of these versions better suited than others for your specific business.

When we decide we will use a computer to do something, we aren't simply fixing something in the current system. Nor are we just switching to a better way of doing what we do right now. When we decide to use a computer we are committing ourselves to an entirely different way of doing things so we can accomplish much more than we ever could have otherwise. It's like buying a lawn mower instead of sending out the goats.

To make such a commitment pay off we must be very clear about what aspects of our operation are do-able with a computer and how we are going to use it in each of those areas. We will certainly want to consider changing some of the things we do and possibly consider doing some things we never did without computers. And we will want to learn enough about the management of this new resource to gain the control we need to depend on it completely, must as we already depend on our car and telephone.

George Morrow, founder and chairman of Morrow, Inc., draws an analogy between the broad expansion in the use of computers and the spread of the written word as a result of the printing press. At the time of Gutenberg, according to George, the major proponent for spreading of the word was the church, and their primary technology for accomplishing it depended on a limited number of highly skilled craftsmen pushing quill pens. Given this well-endowed demand, the printing press represented a major technological breakthrough and spawned a great number of printing press operators, each hoping to capitalize on the exploding market. Unfortunately, according to our scenario, the technology overran the demand. There was apparently a huge, but finite, market for indulgences and bibles. It was some time until the infrastructure existed to support the network of writers, publishers, printers, distributors and retailers.

For those of us who are trying to understand the role of computers in our lives today, this analogy is useful. I believe computers represent the most recent technological breakthrough in use of information, even more important than the printing press. But computer technology has overrun our ability to produce *worthwhile* applications. In terms of the Gutenberg analogy, we do not yet have fully movable type nor standard type fonts. Most of our printers are doing their own writing and many of our writers are required to do their own printing and publishing. Printers are considered authorities on writing and we look to printing press manufacturers and typesetters for advice on what and how to read.

This analogy can give us useful insight on the problems of using computers in business. First, we can see that the computer manufacturer will be no more interested in business applications than the printer will be in manuscripts. Second, who is the equivalent in our context of the author in the Gutenberg analogy? If we are experiencing a serious lag in development of useful applications, it may be because we haven't clearly defined the role of the application designer.

What does all this tell us about selecting a business computer? I'll stick with the comparison to selecting an automobile. There was a time when it became apparent to many people that a car was a necessity. A buyer who resisted buying because of the change in lifestyle or the significant investment involved would have missed a lot and would still be waiting for the latest model.

That comparison dead-ends at the question of how you are going to use a business computer once you've decided to buy. This is where the Gutenberg analogy becomes effective. Look for the answer to this question from a business system designer, not a computer manufacturer or computer programmer. □

INTECH. THE BUSINESS COMPUTER SHOW.

See The Latest Products From Wang, Xerox, IBM, AT&T, Tandem, H-P, And More.

Computers • PCs, Micros • Communications • Integrated Voice And Data Business Systems • Local Area Networks • For Large and Small Businesses

- See the latest information technologies solve "real world" problems
- Witness applications in banking, insurance, finance, manufacturing, and more
- Experience techniques involving micro-to-mainframe links, information security, integrated voice and data systems, networking, and managing the technology

THE USERS TAKE CENTER STAGE!

At the unique INTECH Applications Center—a series of dynamic, multi-product exhibits—you will learn:

- Practical solutions to key issues facing end-users of today's technologies
- State-of-the-art technologies and support resources available today
- How to integrate the technologies by companies committed to "making it work"
- Innovative uses and successful applications by end-users and vendors

INTECH IS FOR YOU

If you are a business professional, an executive, a manager, or a department head . . . a director of MIS, DP, OA, or telecommunications . . . vice president of operations, finance, or communications . . . INTECH is tailored for you!

FOR DETAILS CALL 800-638-8510.

SPECIAL OPEN CONFERENCE SESSIONS

Selected conference sessions featuring exhibit product briefings are so vital that they are open to registered exposition attendees as well. Gain in-depth knowledge about the hottest products available today. Detailed, slide-illustrated briefings are offered by exhibitors on the following (a partial list includes):

- **RCA American Communications**
- **Hewlett-Packard AdvanceNet**
- **Universal Data Systems Fast-Poll High Speed Modems**
- **CPT Cluster of IBM PC compatible products**
- **AT&T Communications ITM (Integrated Technology Management)**
- **Zenith Data Systems Tempest Micro Computer**
- **Keyword Office Technologies Keyword 7000**
- **Integrated Automation DOCUVISION**
- **DAVID Systems DAVID Information Manager**
- **LeeMAH Datacom SAM 350, SAM System 351, port protection**

WIN! WIN! WIN!

All registered INTECH '85 attendees will have the opportunity to win a Hewlett-Packard Portable PLUS computer, a Zenith Data Systems ZFL171 lap-top computer, and other exciting prizes. Complete details at the exposition.

For free entry to the INTECH '85 exposition, complete the information on the ticket below and present at the INTECH '85 registration desk.

INTECH™

Conference: August 26-29 • Exposition: August 27-29
Moscone Center • San Francisco, California

Exposition Hours
Tuesday, August 27: 12 noon to 5 p.m.
Wednesday, August 28: 10 a.m. to 5 p.m.
Thursday, August 29: 10 a.m. to 4 p.m.

This ticket, when properly completed, entitles bearer to FREE entry to the INTECH '85 **exposition only.** Please complete and present at the exposition registration area.

Please fill in completely. Use typewriter or print

Name
Title | Mail Stop/Building
Organization
Address
City | State | Zip

Copyright 1985, National Trade Productions, Inc. No one under 16 is permitted. No cameras or recording devices allowed. For more information call **800-638-8510** or **703-683-8500.**

FREE EXPOSITION TICKET — $10 VALUE

Check the appropriate box in each area.

Please supply this information. You cannot be registered without it.

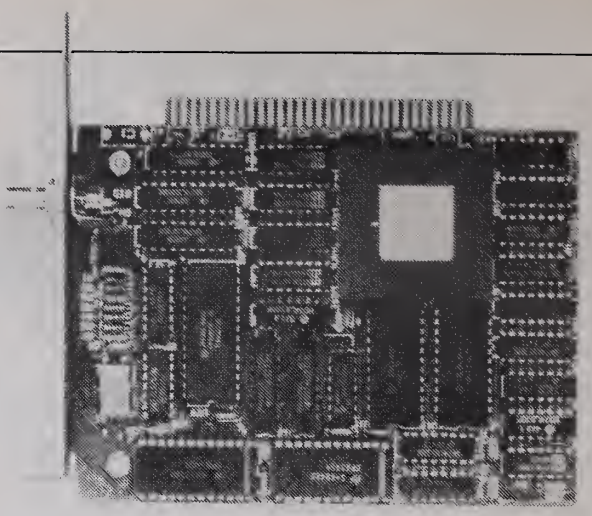
A. INDUSTRY CATEGORY (CHECK ONE)
AB ☐ General Manufacturing
AC ☐ Manufacturing Information Systems
AD ☐ Government Military
AE ☐ Education Library
AF ☐ Computer/DP Information Services
AG ☐ Finance Banking Insurance, Real Estate
AH ☐ Wholesale Retail
AJ ☐ Medical Legal
AK ☐ Utilities/Transportation
AL ☐ Construction Mining Agriculture Petro/Chemical
AM ☐ Research & Development
AN ☐ Other Services
AP ☐ Other_____

B. JOB FUNCTION (CHECK ONE)
BC ☐ Corporate Management (CEO, President, V.P., Owner, Corporate Sec. Gen. Mgr.)
BD ☐ Financial Management
BE ☐ Administrative Management
BF ☐ Other_____
BG ☐ Administrative Systems & Information Management (Director of MIS, IRM, Strategic Planning, CIO)
BH ☐ Data Processing Management
BJ ☐ Programming/Software Management
BK ☐ Communications Management
BL ☐ Other Information Management/Supervisor (Manager of W.P., Reprographics, Micrographics, Information Services, etc.)
BM ☐ Engineering/Manufacturing Management Staff
BN ☐ Purchasing
BP ☐ Marketing/Sales Management
BQ ☐ Consultant
BR ☐ Educator
BS ☐ Other_____

C. SIZE OF ORGANIZATION (CHECK ONE)
CD ☐ Under 100
CE ☐ 100-499
CF ☐ 500-999
CG ☐ 1,000-4,999
CH ☐ Over 5,000

B

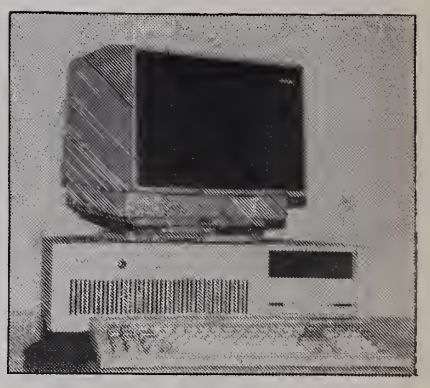
Micro-To-Mainframe Communications For PCs



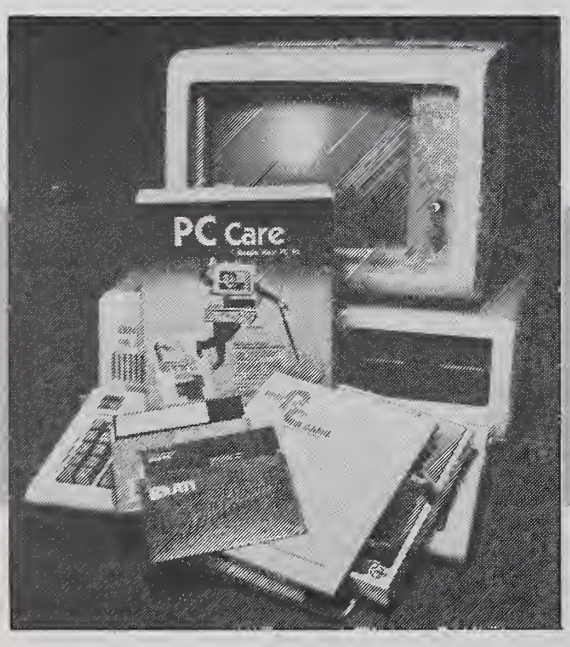
Intelligent Technologies has some new products for micro-to-mainframe communication. The Coax Exchange II communications system includes an add-in board with software for the IBM PC, XT, AT and compatibles; it allows full 3278/9 emulation and links directly to an IBM 3274 or 3276 cluster controller via coaxial cable. Coax Exchange II also provides an interface compatible with the IRMA Decision Support Interface, to allow use of various micro-to-mainframe software and easy integration with existing PC-based networks.

The Coax Exchange Plus software system enhances the use of Coax Exchange II with the ability to handle ten screen profiles and access one host session, on PC-DOS session and two electronic notepads concurrently. Contact J. Bunker and Associates, P.O. Box 28, Mt. Eden, CA 94557, (415) 889-9000.

Speedy AT Compatible

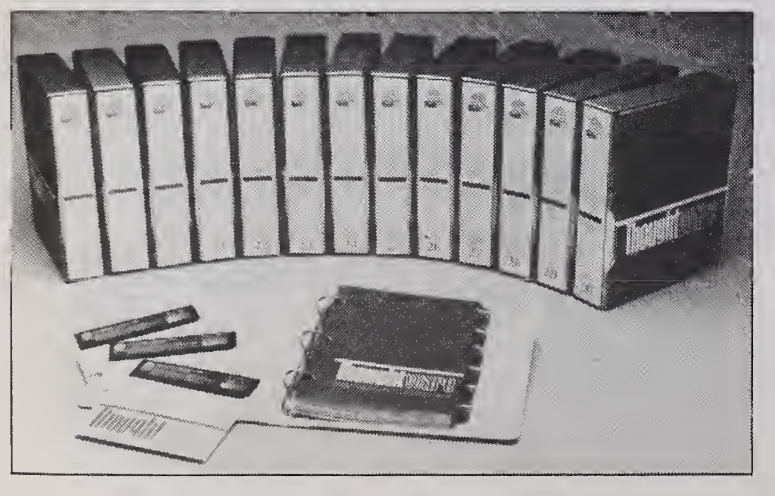


The Nova PC-AT offers computational speed up to 350% faster than that of the IBM PC-XT. It's compatible with PC-DOS, MS-DOS and CPM/86 operating systems and comes with 512K standard on-board memory (expandable to 1 Meg on-board and 16 Meg in virtual address mode). It includes 8 I/O expansion sockets and 4 EPROM sockets, along with connectors for speakers and keyboard. Information may be obtained from Computrade Company, 780 Trimble Road, San Jose, CA 95131, (408) 946-2442.



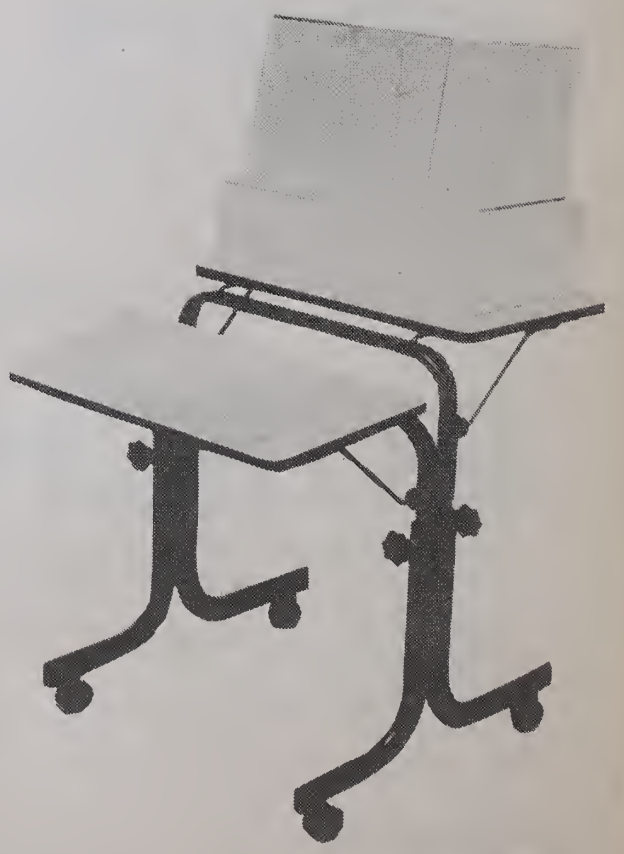
Get Involved In Your PC's Upkeep

Peripheral Maintenance, Inc. of New Jersey offers PC-oriented service and maintenance contracts (nationwide) with a difference. Included in the PC Care package, along with a twelve-month maintenance agreement, are diagnostic software, computer-assisted training software, a reference text on computer care and a troubleshooting guide, all intended to make the client a more informed and productive user and keep the system hassle-free. PMI, 16 Passaic Ave., Fairfield, NJ 07006, (201) 227-8411.



Computer-Based Management Training

Thoughtware Inc., which markets such business training packages as *Sell! Sell! Sell!* and *Management Advantage*, introduces a thirteen-program Management Training Library. The Library is an integrated, interactive package for the IBM PC, XT, AT and compatibles with at least 128K. Both a Management Diagnostic Series and a Management Training Series are included. Thoughtware can be reached by phone at (305) 854-2318, or by mail at 2699 South Bayshore Drive, Suite 1000A, Coconut Grove, FL 33133.



No More Stiff Necks

Adjustable Computer Products introduces the latest ergonomic wonder from Denmark, the Adjustable Computer Table. The bi-level work surfaces adjust in height from 24.5 to 32 inches to accommodate a range of users from children to tall adults; the table will also adjust to fit a variety of equipment from large desktops to portables. The ACT also features twin-wheel locking carpet casters for easy mobility in cramped work areas. Dealer inquiries are welcome. Adjustable Computer Products, 6776 Southwest Freeway, Suite 150, Houston, TX 77074, (713) 783-3881.

We'll Match Their Price

Bring in any ad from any local dealer/any product, if we both have it in stock we'll match their price

It's the Macintosh™ 512

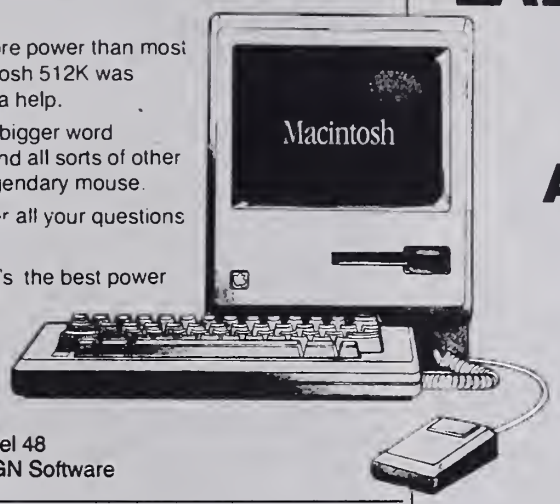
A new version of Apple's* Macintosh Personal Computer with four times the memory of The Original And every bit as easy to use.

Of course, the Macintosh 128K still gives you more power than most of the people need, most of the time. But Macintosh 512K was made for those of you who could use a little extra help.

So you can do 50% larger spreadsheets, 800% bigger word processing jobs. 1000% bigger planning jobs. And all sorts of other wonderful things. all with the click of Apple's legendary mouse.

As always, our sales staff will be happy to answer all your questions and provide plenty of service and support

Macintosh 512K. No matter what work you do, it's the best power tool you can have.



Best prices around!

Macintosh 512 Image writer printer second disc drive MacWrite/MacPaint complete system.

As seen on Affordable Computer Hotline Channel 48
Shown Utilizing EMU Synthesizer & DIGI DESIGN Software

LABOR DAY MACINTOSH FAIR & TENT SALE

AUGUST 30, 31 Sept. 1,2

Hours 10-9 PM

FREE ADMISSION
DOOR PRIZES
FOOD & DRINK

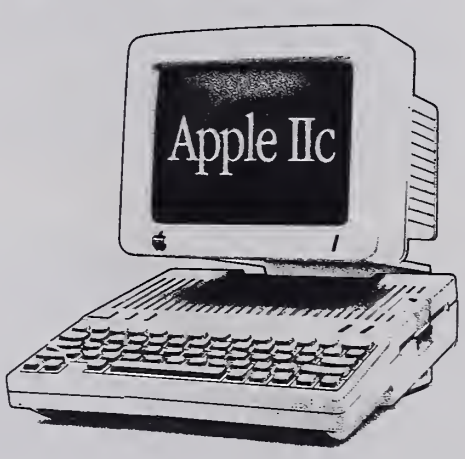
- Bring The Whole Family
- Win A Macintosh 512K and More
- Food & Drink Available while you shop

Now every kid can have an Apple after school.

With an Apple IIc Personal Computer, your child's education doesn't have to stop when the bell rings.

The IIc can run most of the educational software written for the Apple IIe, the computer used by more schools than any other in the world.

This 128K Apple weighs just 7 1/2* lbs. and has everything built-in including a disk drive. And comes with everything kids need to start opening doors to the future-including a 4-disk course on basic computing.



Apple IIc • 128K • 80col • Disk Drive
Operating system • MONITOR

*The IIc alone weighs 7.5 pounds.

Our usual low price

$950

APPLE PROFESSIONAL SYSTEM

- Apple IIe 128K
- 2 disk dr (duo)
- Monitor II
- Operating system
- 80 col.
- All Apple

$1295

Now In Stock

ATARI ST520

- 524K CPU w/Mouse
- Color RGB Monitor
- 500K Micro Drive
- GEM Operating System
- LOGL Language
- 3 Voice Synthesizer
- MIDI INTERFACE

only $995

- **MIDI INTERFACES**
- **PASSPORT SOFTWARE**

AFFORDABLE
COMPUTER SYSTEM INC.

HOURS:
Daily 10-7,
Sun. 12-5

SANTA CLARA
3331 El Camino Real
249-4221

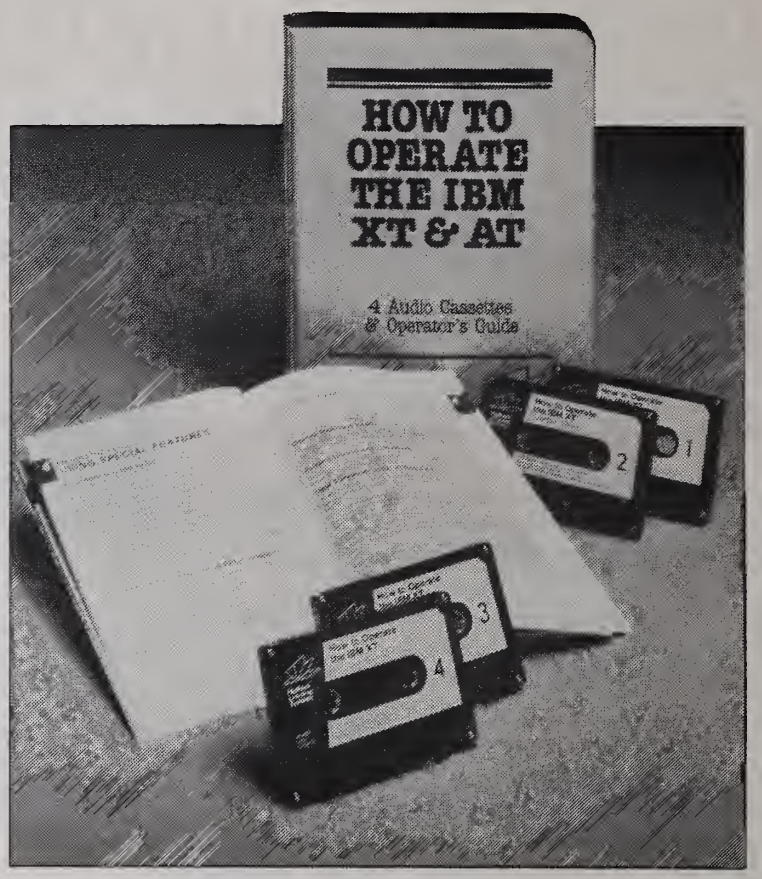
SAN JOSE
1182 No. Capitol Ave.
251-0102

SANTA CRUZ
Cooper St. Plaza 740 Front St.
458-1644

DUBLIN
7367 Village Parkway
(415) 829-8644

Flexible AT Compatibility

OEMTEK of San Jose has some solutions for the business user who likes the PC-AT but wants more flexibility than IBM offers. The OTI Model 1 is more compact than the AT at 15" x 14" x 6", has five expansion slots and space for two 5¼" half-high floppy or hard disk drives. Model 2 measures 10.75" x 16" x 15.5", includes eight expansion slots and space for six 5¼" half-high floppy, hard or streaming tape drives. Both are fully compatible with the IBM PC-AT and have been designed for flexible system configuration. Information is available from OEMTEK, 3707 Williams Rd., San Jose, CA 95117, (408) 247-1100.



Help For The XT-AT Neophyte

FlipTrack's *How To Operate The IBM XT & AT* is a step-by-step tutorial for fledgling users. The course includes four audio cassettes and an Operator's Guide, and leads the learner from basic start-up procedures to such intricacies as tree-structured directories and setting up batch-processing files. The list price of the course is $89; it's available from FlipTrack Learning Systems, 999 Main St., Glen Ellyn, IL 60137, (800) 222-FLIP.

Make Your PC A Telex Terminal

CompuTelex software from Micro Computer Trends allows the user to access telex lines using just an IBM-compatible PC and a modem. Features include a message editor, single-key sending and receiving of telex messages, automatic logging of telex communications by date and time, on-line Help, and a directory for storing telex numbers. The program sells for $149 and is available from Micro Computer Trends, 8421 Wilshire Blvd., Suite 202, Beverly Hills, CA 90211, (213) 653-4331.

New Business Machine From Panasonic

The new all-in-one Exec. Partner is an all-in-one business computer that features IBM compatibility, two built-in DSDD 360K floppy drives, an 8087-2 math coprocessor socket, serial and parallel ports, an IBM XT-sized 62-pin expansion slot, and a real-time clock powered by lithium batteries. The Exec. Partner is designed for easy transportability, measuring 21.25" x 16" x 5"; it has a hi-res plasma display screen and a built-in correspondence-quality printer with two print modes. Suggested retail is $2595. For information contact Panasonic Industrial Company, One Panasonic Way, Secaucus, NJ 07094.

disclone

A professional, full-service diskette duplication and software production facility.

INTRODUCING DISCLONE

DISCLONE SERVICES
- Diskette Duplication
- Format Conversion
- Copy Protection
- Serialization
- Package Assembly
- Shrink Wrapping
- Drop Shipping
- Custom Packaging

DISCLONE PRODUCTS
- Media
- Custom Binders/Slip Cases
- Custom Labels
- Custom Diskette Sleeves
- Manual Printing
- Diskette Mailers
- Diskette Holders

Only a clone is better than a copy.

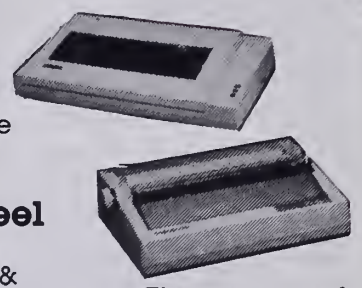
Call and Find out Why!
(408) 947-1161

1585 N. Fourth St., Suite E, San Jose, CA 95112

DEALERS JOIN US NOW

- High Quality
- Complete Line
- 100% Compatability
- Available Now

BLUE CHIP PRINTERS



Dot Matrix
- 150 CPS
- Full Graphic capability
- 10 or 15 inch carriage available
- Near letter quality mode
- Tractor and platen feed

Letter Quality Daisy Wheel
- Typewriter quality
- Variable number of characters & lines per inch
- Numerous typestyles and fonts available

The most powerful, yet inexpensive printer sold in America.

Albany
Monarch Computer
(415) 526-7741

San Francisco
Aquarian Age
(415) 386-3890

Sunnyvale
Fry's Electronics
(408) 733-1770

San Jose
Affordable
(408) 251-0102

Santa Clara
Payless PC Center
(408) 249-8411

Affordable Computer
(408) 249-4221

COMPUTECH
TEAC Authorized Distributor

800 Charcot Ave #106 San Jose Ca 95131
408-435-1050

We also distribute: Systems, Hard Disks, Add-on Boards, Tape Back-ups, Floppy Disk Drives, 64K/256/ DRAM, Printers, Monitors and accessories.

• Dealer Inquiry Welcome • Dealers Only •
• Call for Latest Catalog •

From Presentations to Paintings Computer Graphics Center, Inc. Can Fill Your Needs

We Provide Graphics Systems, Software and Workstations
Specializing in Macintosh and IBM PC Compatible Systems

We Feature Many Graphics Products

MACINTOSH
- MAC CAD
- MAC ENHANCER
- MINICAD 3-D
- MAC VISION
- MAC TABLET
- PLOTTER DRIVERS

IBM PC COMPATIBLES
- DIGITAL PAINTBRUSH
- ZENITH DATA SYSTEMS
- CHORUS DATA SYSTEMS
- POLAROID PALETTE
- EPSON PRINTERS
- PLOTTERS
- DIGITIZING PADS

✱ **New Item! DATACOPY**
Word Image Processing System For Your IBM PC

We also provide LIMELIGHT screen projectors and Many Other Products.
Call Us or drop by for details.

Computer Graphics Center, Inc.
444 HIGH STREET
PALO ALTO, CA 94301
PHONE: 415-325-3111
(next to the Stanford Bookstore)
See us at the PC Faire Booth #1618

Mastercard and Visa accepted

Showroom hours:
Mon.-Fri.: 10 to 6
Sat.: 10 to 5

The Smart Answering Machine

For IBM-PC and Compatibles

SAM turns your IBM personal computer into a sophisticated voice messaging center that helps you communicate more effectively with your clients, associates and others.

S·A·M· retail Price $295
Dealer Inquiries Welcome

- Real Voice Recording and Playback.
- Preprogrammed Outbound Calling: Both Timed and Group Message Delivery.
- Stores Separate Personal Messages Retrievable by up to 999 Different Callers.
- Full Remote Interface with Voice Prompting, Message Retrieval, Message Recording and Programming of All Features.
- Call Screening
- Auto-Dialing Phonebook Data Base
- Date and Time Stamping of All Messages.
- Uses 256K, Floppies or Hard Disk, No Modem Required!
- Stores and Forwards Your Messages to You.

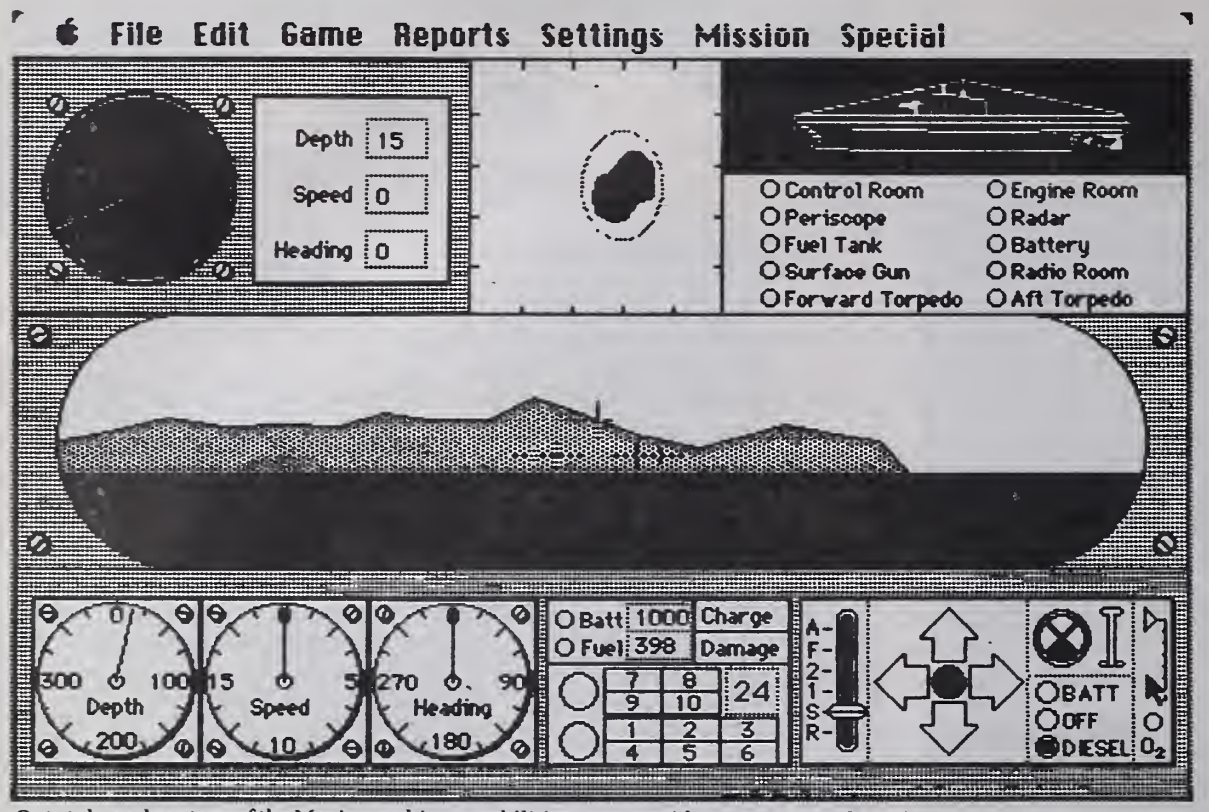
Available Now from

DIALECTRON, INC.

(415) 960-3040

2035 California St., Suite 17 Mountain View, CA 94040

Dealer Inquiries Welcome



Gato takes advantage of the Mac's graphics capabilities as you guide your WWII submarine through hazardous missions.

GAME SOFTWARE

Gato

Published by: *Spectrum HoloByte Inc.*
For: *Macintosh*
Suggested retail: *$49.95*
Reviewed by: *Bill Reefer*

Gato is a WWII submarine simulation game produced by Spectrum HoloByte. You may be familiar with this game, which originally appeared for the IBM PC and then the Apple II. But now *Gato* is available for the Macintosh. In fact, the *Softsel* HOTLIST reports that *Gato* has replaced Sublogic's *Flight Simulator* as the number-one-selling software program since the release of the Macintosh version on May 29th. The Mac version of *Gato* was written by Sean Hill, James Rhodes, and Bill Scott.

The graphic capabilities of the Macintosh make this game a joy to play. You are the Captain of the USS *Growler*, a Gato class submarine, which performed the bulk of the US Navy's submarine warfare during WWII. The screen displays the ship's radar, instrument readouts, periscope and bridge views, speed, power, depth, heading, and armament. All of these are controlled by the mouse. If you prefer, many of the instruments have simple keyboard controls as well.

The game is played out on an imaginary expanse of the Pacific Ocean that is divided into 20 quadrants. A portion of the screen will alternately show a quadrant map or the entire chart map when you click on it with the mouse. Traces of enemy ships can be seen on both the chart and quadrant maps, depending on the level of difficulty you choose.

All of that is supplemented by the menu commands that provide radar and damage reports, the captain's log and target book, and skill level settings. There are ten levels of difficulty with 30 possible assignments. The game really gets tough, too, when you start to climb up the ladder of difficulty. For instance, at the levels above two you lose the ship traces on the chart map. At level five, you lose the traces even on the quadrant map. At the levels above seven, the Morse code messages are just bleeped out and not even printed. (A Morse code tutorial resides on disk.)

Another great feature of this game allows you to create customized missions and save them to be played over and over again until you get it right. Ten special missions have already been created for you until you get to the point where you might want to create your own. These missions are in addition to the 30 assignments already supplied. You can also save your progress within up to five different games to the disk.

The action happens fast in *Gato*, even on those three-day treks to your target. A special optional speed-up mode is provided to move things along until you and the enemy bump into each other's sonar. Then it gets hairy. Your mission may be to sink a heavily escorted convoy, rescue survivors of a vessel attacked by the enemy, mine a quadrant full of enemy ships—no ho-hum stuff here. Blast your way through, or run silent, run deep. The choice is yours. You and the mouse are in command. It's sink or swim! Oh, be careful, too! The enemy frequently breaks ComSubPac's code and might send you into an ambush. As much realism as possible has been crammed into this game, including the tactics and capabilities of the enemy ships. You'll learn this quickly once you see the zigzagging convoys and circling destroyers.

Your ship is armed to the gills with six torpedo tubes forward and four aft. You can carry up to 24 torpedoes during any given mission, or mix and match torpedoes and mines, according to assignment. Radar reports chart the speed, heading, and distance of enemy ships. This is helpful in lining up your target, particularly on those tough bow shots.

There are many perils at sea, not the least of which is the enemy's fire. The enemy's depth charges can wreak havoc, and their ships like to ram submarines that forget to dive deep enough. But, until you get the hang of navigating the shallow waters, running aground or gouging the sub's outer hull on a coral reef is just as dangerous. Note, too, that you can complete your mission only to find that the captain and good crew perished for lack of a sharp eye on the oxygen indicator and/or the depth gauge. But if you have been successful and can navigate back to your own sub-tender, you can re-fit the *Growler* and take on new supplies for another mission.

Gato works well on a 128K Macintosh. The sound effects are minimal beeps and explosions that are more like static. It will not operate if you try to open it from the Finder. There are some minor bugs in it that have caused the screen to freeze up or plain go dizzy. However, these are only minor annoyances in a game that is otherwise highly recommended.

PERIPHERALS

FootMouse

Manufactured by: *Versatron Corporation*
Suggested retail: *$225*
Reviewed by: *Lion Goodman*

The FootMouse, from Versatron Corporation, is a better MouseTrap for solving the thorny problems created by word processing software (like *WordStar*) and spreadsheets (like *Lotus 1-2-3*) which require the constant use of Control commands to move the cursor or shifting of the NumLock key to use the number keypad for entering numbers.

The FootMouse is extremely easy to install. The device is plugged in between the keyboard cable and the computer. The mouse is a footpad requiring some fancy footwork to move the cursor North, East, West, and South (Up, Down, Left and Right for those of you who are so oriented).

For heavy spreadsheet users who would use the number keypad for data entry were it not for the unfortunate requirement to turn NumLock on and off with each need to use the cursor, the FootMouse is a dream come true. (Shifting out of NumLock can be accomplished with the Shift key as well.) FootMouse overrides the NumLock key, allowing you to move the cursor while entering numbers on the keypad. The longer you hold the FootMouse in position, the quicker the cursor moves in that direction.

For *WordStar* users, or users of other word processing programs where Control-D is used for a move to the right, for example, the FootMouse can relieve the strain on the left hand as it attempts to move fingers in two directions at once, a movement not intended by nature's anatomical design. Or, for cursor key users, the little dance of the right hand over to the cursor keypad and back, requiring diversion of the eyes and periodic mistakes and rekeying, all can be eliminated by the foot's movement of the mouse. This is especially useful for heavy text editing applications, where you want to keep your fingers on the character keys and speed on to the next correction or insertion.

My experience of the device was as advertised. It took about fifteen minutes to master the movement of my foot, and thus the cursor. It worked flawlessly with my integrated software package (*Enable*). My tendency was to roll my foot side to side and heel to toe, but the device is designed to slide, not roll, in the direction you desire. I experienced some tension in my calf and knee, but felt that this was due to a new use of the muscles, and that with practice I could keep my leg relaxed while using the device.

In my review of the device, I asked three other people to try out the FootMouse. All had basic secretarial and data entry tasks to perform, and were experienced word processing and spreadsheet users. One secretary, who used a dictation machine as well, had trouble using the footpad of the dictation playback unit with one foot, and the FootMouse with the other foot. She compared it to play-

Meet The Vanilla PC!
IBM Compatible!

Only $1595!

The Vanilla PC is 99% IBM compatible and features 8088 CPU with optional 8087 co-processor. The Mother Board is upgradable to a maximum of 640K with 256K RAM chips. It also features 8 IBM compatible expansion slots, 1 parallel printer port and 2 serial ports. Includes 2 floppies, monitor, and 6 month warranty.

Our distinctive pop-top case provides easy access.

Your Choice!

Other configurations available include:

Vanilla PC 256K, 1 Floppy, 10MEG Hard Disk, Monitor	**$2250**
Vanilla PC 640K, 1 Floppy, 20MEG Hard Disk, Monitor	**$2650**
Add Color Monitor To Any Vanilla PC	**$ 250**
Upgrade Vanilla PC from 256K to 640K	**$ 150**

Other configurations available on request.

140 Second Street, 6th Floor
San Francisco, CA 94105
415-974-6200

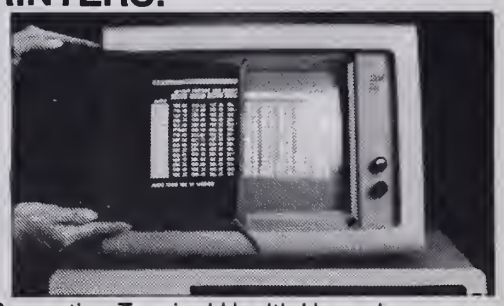
Dealers Call Vanilla Computer Systems 974-6203!

PC EXPRESS

TAME YOUR TERMINALS, SILENCE YOUR PRINTERS!

POWER SCREEN FILTERS
- Reduce glare
- Trap Electrostatic fields
- Suppress VLF radiation
- Protect hardware/software
- Priced under $50.00
- Over 100 models

MKM SOUND ENCLOSURES
- Up to 90% noise reduction
- Over 60 models



Call for a **FREE** copy of Preventing Terminal Health Hazards

ERGONOMIC COMPUTER PRODUCTS

"PEOPLE PRODUCTS FOR THE COMPUTER"

415-673-5757

Distributors/Dealers/OEM

Please call for our amazing prices!

IBM PC/XT Compatible Motherboard Now Available Call for Best Price

IBM PERIPHERALS

384K Multifunction Card
(Parallel/Serial/Game/Clock/384K)
Monochrome/Graphic/Printer Card
(Runs Lotus 123, 64K, 720x248)
Color Graphics Card
Floppy Disk Controller Card (with Cable)
Multi I/O Card
Parallel Printer Cable 6FT/10FT
512K RAM Card
384K RAM Card
256K RAM Card
Game Card (support 2 joysticks)
Clock Card
RS232 Card
Parallel Printer Card
Case for PC/XT (Flip Top or Slide)
5151 Compatible Keyboard
192.5W Power Supply for AT
130W Power Supply for PC/XT
Case for AT
Keyboard for AT

ACCESSORIES

Joystick for IBM PC/Apple IIe, II Plus
Super Quiet Cooling Fan for Apple IIe
Supreme 25N 3½" Disk Filing Tray
Supreme 50N 5¼" Disk Filing Tray
Supreme 100N 5¼" Disk Filing Tray
Swivel Monitor Stand - 11"
Swivel Monitor Stand - 14"
Surge-Free Power Center (UL Listed)

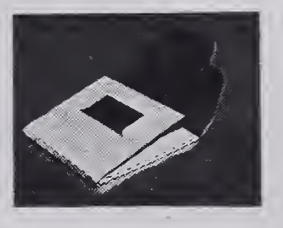
IBM COMPATIBLE CASE FOR PC/XT & AT

SUPREME CO.

an importer for computer accessories

1101 S. Winchester Blvd., F166 San Jose, CA 95128 **Tel: (408) 249-4512**

Floppy Disk Mailers



- Self-locking closure
- Made out of corrugated cardboard for rigidity and cushioning
- Can be used for either 5¼" or 3½" disks
- Multiple size for shipping up to 5 disks at a time
- Single size for shipping individual disks
- Attractive white exterior

	per bundle of	25	50	100
Single or Multiple	Price	.69 ea.	.59 ea.	.49 ea.
	Shipping	$2.00	$3.00	$5.00

No Shipping and Handling charge on orders of 300 or more boxes.

Shipping and handling charges are $2.00 for the first 25 boxes plus $1.00 for each additional 25. No Shipping charge on orders of any combination of 300 or more boxes.

All orders shipped UPS
No C.O.D.'s

Order in multiples of 25

	Quantity	Price ea.	Total
Single			
Multiple			
		Total Order	
		Calif. Res. Add 6.5% Sales Tax	
		Add Shipping & Handling	
		Grand Total (please enclose)	

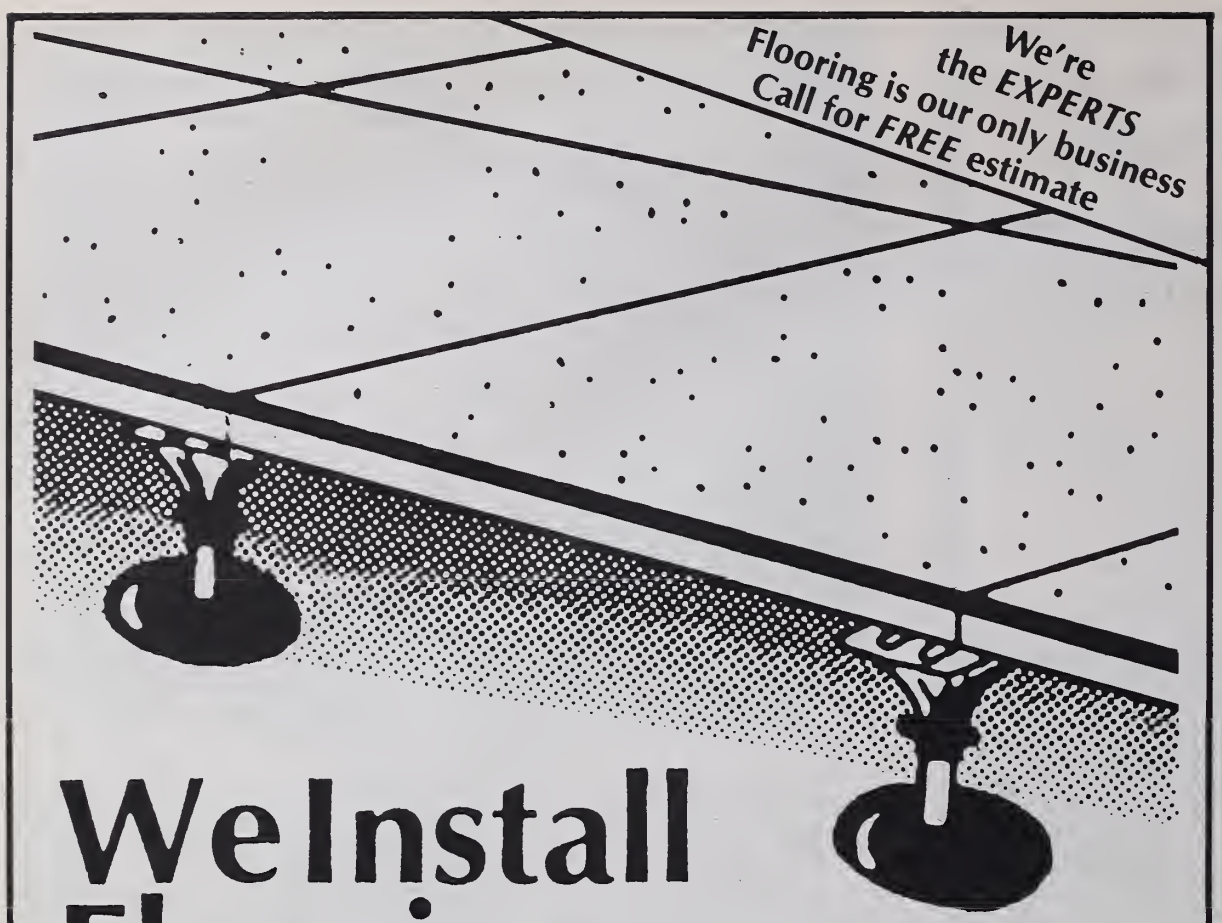
Ship to:

Name _____

Street address _____

_____

Bulldog Container Co. • 4213 Glen Haven Rd., Soquel, CA • 95073



We Install Flooring

For Computer Rooms

NATIONWIDE

•Buy & Sell •New & Used

CALL OR WRITE

RAISED FLOOR INSTALLATION INC.

CA: 408/435-0401 CAL. LIC. 435-286
NJ: 201/778-2444 TELEX: 136479

810 Charcot Avenue, San Jose, CA 95131

IBM XT COMPATIBLE $785

256K RAM, 1 Drive, 130 Power Supply
Deluxe Keyboard, Case, 8 Expansion Slots.

10 MB Hard Disk w/Controller . . . **$485** free installation
20 MB Hard Disk w/Controller . . . **$695** free installation
• Printers from **$198** • Monitors from **$83**
• Accessories & Peripherals - Call For Our LOW PRICE
Macintosh Upgrade to 512K . . . **$235**
Macintosh Imagewriter Printing . . . **$1**/page **$5**/min.

CCP
Cassidy Computer Products

(408) 738-1226
195 S. Murphy
Sunnyvale Ca. 94086

ing a large church organ. For her, using *WordStar* and its Control-Character cursor commands was easier than trying to retrain herself for FootMouse use.

Another individual considered the FootMouse "frivolous" and unnecessary for her simple word processing applications. "Just another thing to think about," was her comment. The main point here seems to be the motivation of the user. If you are bothered by the dance of the two hands or the NumLock toggle switch, the FootMouse looks like a great answer to your prayers and curses. If you haven't noticed a problem, the FootMouse probably looks like just another gimmick, or "one more thing to think about." In other words, don't expect someone who is trained to use *WordStar* to be turned on to the FootMouse right away. It does take time to re-train yourself to use your foot instead of your right hand.

The FootMouse is built to last, however, and the company certainly does not consider it to be a gimmick. Built to military specifications, the switches are designed to last at least 5 million uses, and the testing laboratories have put the devices through 10 work years of use with no failures. Beginning shipment in January of 1985, the company claims to have shipped 20,000 so far and is expecting sales in excess of 60,000 units this coming year.

Versatron sells the FootMouse through distributors and dealers, as well as through Value Added Distributors and retail stores. The FootMouse retails for $225, but is available through many discount outlets for as little as $190 or $175. The device is customized to the board level hardware of one's computer. The standard FootMouse will work with the IBM PC or XT, Compaq DeskPro, and ITT Xtra. Any other clones should be specified, as some take a different ROM chip. For Compaq Portable users, the bad news is that since the device plugs in between the keyboard and the computer, unless you have modified your Compaq to a pluggable keyboard, you can't use the FootMouse. Versatron has a system which requires going inside the Compaq, but since this voids any warranty you might have, they have not yet released this model. They are currently talking to their insurance company and lawyers to see if they can get around this sticky problem. One possible solution is their RS-232 model which plugs into a serial port. If you have a serial port available, this may be a good answer.

Other models available are: Heath/Zenith, AT&T 6000, and Tandy 1200. At this time, Apple is testing a compatible FootMouse, but this has not been released yet. Versatron will customize a FootMouse for an additional fee, or for a minimum order will customize the ROM for any system. They also have devices which can be used with CP/M machines. Versatron is also negotiating with a number of companies to bundle the device into certain hardware or software.

Analysis: If you are bothered by the NumLock or Control-Command problem, the FootMouse is a solution to your problem. If you don't have the problem, the FootMouse is the latest in electronic wizardry. (If it's not broken, don't fix it.) For those of us who must have the latest in electronic wizardry, however, as well as those who do have the need, the FootMouse does its job easily and flawlessly, and will make all your cursor movements smooth ones. (Versatron Corporation, 103 Plaza St., Healdsburg, CA 95448. (707) 433-8244. In CA: (800) 435-1550. Outside CA: (800) 443-1550.)

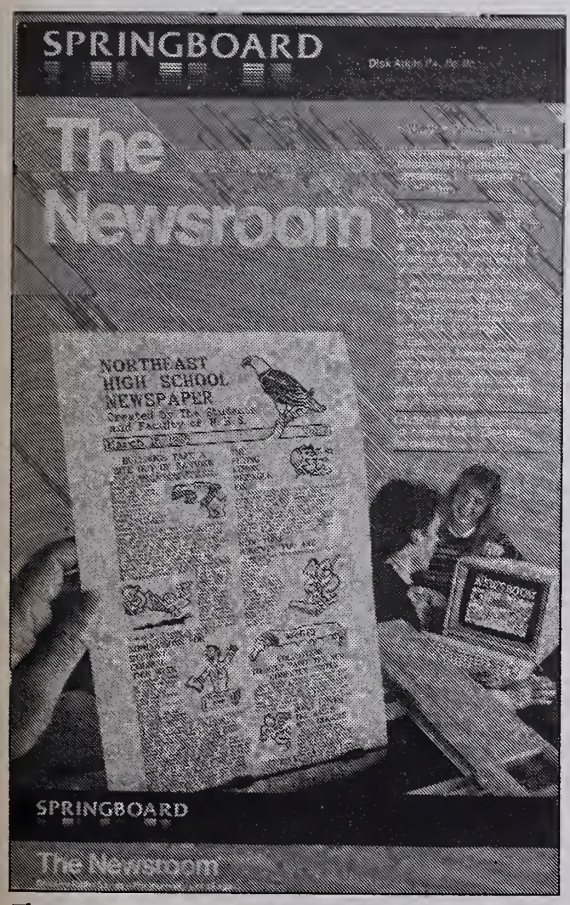
EDUCATIONAL SOFTWARE

The Newsroom

Published by: *Springboard Software, Minneapolis, Minnesota (1985)*
For: *Apple II+, IIe and IIc (two disks)*
List price: *$49.95*
Reviewed by: *Mike Markowitz*

The Newsroom is a remarkably ambitious package that represents the new generation of Apple II software inspired by ideas from the Macintosh (icons, bit-mapped text and graphics, mouse-like interfaces, etc.) *Newsroom* invites comparison with *The Print Shop* as a software product that squeezes every bit of performance out of your old hardware, and lets you do things with your computer you could never do before.

Basically, *The Newsroom* is an integrated, multi-function newsletter utility. It was designed for



***The Newsroom* offers amateur journalists of all ages graphic, writing, and typesetting options for compiling their own newsletters.**

beginning classes in journalism at the elementary or junior high school level. It will probably find many grown-up applications in designing club or company newsletters, bulletins, flyers and advertising. The manual says "it has the tools and flexibility to create surprisingly stylish, sophisticated publications." The present version is for Apple II's, but IBM PC and Commodore 64 versions are forthcoming.

The physical package includes two disks: a program master disk and a graphics file ("clip art") that fills two sides of another disk. There is an 86-page manual and the best box I have ever seen: a hard plastic case, seven by nine inches wide and an inch deep, with a solid snap closure and plenty of room for extra disks. You will need at least two (four is better) initialized blank disks to store the various elements of the pages you compose and lay out.

When you boot the master disk, the opening menu is a cute color cartoon of a newspaper office

THE PURCHASING AGENT WORKS FOR YOU

We can buy any microcomputer product for you from our 300 participating wholesalers. Here are the net prices on a few of the 7,000 products we can buy for you, acting as your purchasing agent.

COMPUTERS
Alpha Micro 1000EVW 7,967
Altos 186-10 w/terminal 4,509
2086-2 w/o terminal 14,444
2086-4 w/o terminal 16,702
486-20 w/o terminal 4,285
586-20 w/o terminal 5,300
586-40 w/o terminal 6,776
586T-40 w/o terminal 8,048
986-40 w/o terminal 8,250
986T-40 w/o terminal 9,553
986T-80 w/o terminal 11,058
AT&T 6300 2,334
3B2, 10 meg. 9,262
Compupro Godbout*
We have been using Compupro Multiuser Systems in our business for the past four years and recommend them above all other computers. There are now so many systems and S-100 boards that we ask that you call us for prices. CALL
M-Drive/H, 2 meg. 1,700
.5 meg. (used) 450
Macrotech MI-286 767
Pragmatic 10 meg., 8" 2,097
Quantum, 40 meg., Disc 3 2,250
Columbia 2116 1,410
2220 1,835
2620 2,600
4220 1,964
4620 2,525
4750 3,575
4820 3,225
4950 4,275
Hewlett-Packard HP110 2,440
HP150 2,889
Molecular CALL
NEC APC-H03 (Demo) 2,000
APC-H12 Graphics 618
Special Softpacks 879
APC-H13 8087 395
APC-H31 128K RAM 401
8401 Starlet 822
8800 *Special*
These systems include CP/M, Wordstar, Mailmerge and Multiplan.
2-5.25" Drives 992
2-8" Drives 1,240
Northstar CALL
Televideo TS-1605 D+ 1,883
TS-1605 H+ 3,258
Visual 1050 1,845
Wyse 1100-1 1,368
1100-2 2,530

ACCOUNTING SOFTWARE
Aardvark CALL
BPI, each module 430
CYMA, each module 545
MBA CALL
MBSI, each module 418
McGraw-Hill CALL
Open Systems, ea. mod. 435
Solomon, each module 513
Structured Systems CALL

HARD DISKS
Alloy CALL
Cameo CALL
Corvus 45 meg. package 4,259
Davong, 15 meg. Univ. 2,138
21 meg. Univ. 2,519
32 meg. Univ. 3,040
Infax Vufax CALL
Iomega 10 meg. 1,840
20 meg. 2,435
Mountain Computer
10 meg. external 1,547
10 meg. internal w/tape 3,136
15 meg. external 2,167
20 meg. external 2,554
35 meg. external 3,484

HARD DISKS
Mountain Computer
Tape B.U. 27 meg 1,702
60 meg 1,857
Santa Clara Sys. 10 meg. 1,970
Sigma 10 meg. internal 876
10 meg. external 1,082
20 meg. external 1,624
Sysgen CALL
Tallgrass 12 meg., tape. Intf. 2,000
5025 25M + 60T 2,761
6135 35M + 60T 3,551
6050 50M + 60T 4,341
6180 80M + 60T 5,917
IBM Interface 130

IBM PERIPHERALS
Keytronics 5150 keyboard 147
5151 keyboard 189
Hayes 1200B 340

MODEMS
Hayes 1200 369
US Robotics Password 195

MONITORS
Amdek 300G 110
Color IV T 668
Amtron 1024 x 1024 2,500
Microvitek Cub 783
NEC 1410 RGB 780
Princeton HX-12 RGB 455
Quadram HX-12 RGB 475
Taxan 420, RGB w/cable 485

PRINTERS
★ LASER PRINTERS ★
Canon LBP-A1 CALL
CDS (Tektronix graph.) $4,649
DTC (For IBM AT graph.) 6,495
Hewlett-Packard 2,900
PCPI Daisylaser 1000 2,709
Canon engine, 8 ppg./min.

Anadex 9501B 991
9620B 1,070
9625B, parallel 1,165
9725B parallel 1,237
WP6000 2,065
DP6500 2,309
Brother DXL-15P, S 397
HR-25P, S 628
HR-35P, S 884
C. Itoh 8510BPI 350
F-10, 40 cps. 908
F-10, 55 cps. 1,083
C I-300, 300 lpm. 3,790
Daisywriter 2000 898
Dataproducts B 300-4 5,921
8050 color 1,179
Datasouth DS-180 995
DS-220 1,212
DEC CALL
Diablo 620 R 105, API 690
630 API 1,475
630 ECS-IBM 1,748
80-IF 2,362

PRINTERS
Diablo D-25 569
Series 36 1,180
DTC 380Z 945
Epson FX-80+ 450
FX-100+ 610
LQ-1500P 1,199
Florida Data OSP-130D 3,287
Fujitsu 320, 48 cps 1,085
830, 80 cps 1,744
Dot Max 24 1,500
GE (General Electric) CALL
IDS Prism 132, w/color 1,395
Juki 2200 325
6100 425
6300 742
NEC 2010 668
2050 668
3510 1,034
3550 1,034
7710 1,688
8850 1,546
Elf 360 438
Elf 370 414
Pinwriter, P2-2, 3 535
Pinwriter, P2 Color 726
Pinwriter, P3-2, 3 767
Pinwriter, P3 Color 991
Okidata 182P 249
182S 289
192P 395
192S 439
193P 528
193S 589
82A 319
83A 544
84P 652
84S 745
2350P 1,765
2350S 1,820
2410P 1,765
2410S 1,833
Olympia CALL
Printronix P300 4,995
Qantex 7040 1,409
7065 1,575
Qume 11/40 w/interface 1,342
11/55 w/interface 1,450
11/90 w/interface 2,179
Letterpro 20 420
Siemens inkjet 826
Silver Reed 400P 262
500P 312
770P 725
Star SG-10 265
SG-15 409
SD-10 373
SD-15 480
SR-10 517
SR-15 631
SB-10 750
Serial Interface 110
Powertype 333
Tally 180L, w/tractor 715
Teletype 40 2,500
Toshiba P-1340 598

PRINTERS
Toshiba P-1351 1,195
P-351P 1,337
P-351P&S 1,372

CAD/CAM SOFTWARE
Call us for prices

PLOTTERS/DIGITIZERS
Amdek Amplot II 811
DXY-100 591
Calcomp 1043 7,217
Enter Six Shooter 849
Sweet P 650
GTCO MD-7, 4 button 767
Hewlett-Packard 7470, 2 pen 883
7475, 6 pen 1,547
7550, 8 pen 3,177
7585, E 11,873
Hitachi HDG-1111, Tiger 833
HDG-2222 3,035
Houston Instr., DMP 29 1,693
DMP 40 715
DMP 42 2,209
DMP 52 3,316
DMP 52MP 4,442
DT11C 650
DT114 718
PC PAD 315
PC 595 516
PC 695 590
Roland DXY 880 1,004
Strobe M 100 461
M 260 772
Wyse 600 Color 565

SURGE PROTECTORS
Compugard 99

TERMINALS
Adds Viewpoint A1/A3+ 499
C. Itoh 80A 1,016
101E 1,278
DEC VT100 1,529
Hazeltine Esprit II 520
Esprit III, color 862
Esprit 6110 425
Esprit 6310 550
Lear Siegler ADM-11 530
Liberty Freedom 110G 12" 442
Freedom 200G 12" 80 515
Freedom 220A 14" 132 572
Qume QVT102A 459
QVT103A 743
QVT108A 485
Televideo 914 555
924 713
925 715
950 905
955 493
970 1,015
Visual 60 475
550 1,220
Wyse WY-50 480
WY-75 623
WY-100 680
Zenith Z-29 644

CALL US FOR THE NET PRICE ON ANY OF THE 7,000 OTHER PRODUCTS WE CAN BUY FOR YOU.
F.O.B. shipping point. Prices subject to change without notice.

Since 1980

THE PURCHASING AGENT, INC.
2444 Old Middlefield Way, Suite J
Mountain View, CA 94043
(415) 964-8222

Bill Amatneek will teach two 12-hour classes in

dBASE III PROGRAMMING

the week of September 16 at the Mill Valley Howard Johnsons
Evening Class: Monday through Thursday, 9/16-9/19 7 to 10pm
Weekend Class: Saturday & Sunday, 9/21-9/22 9am to 4pm

Participants will write a Menu-Driven dBASE III program utilizing 2 related databases, which will allow a user to add, change & delete data, and print reports. The class is $295.00.

Bill has taught dBASE to hundreds of adults at Bay Area Universities and corporations. He writes the Data Base Management column for MicroTimes.

For more information write to Data Base Associates
193 Miller Avenue, Suite 2., Mill Valley, CA 94941

or call 415/388-8024

A no risk investment guaranteeing high returns is not easy to find,
but that is exactly what you'll get from the

3rd Personal Computer Faire

September 5-7, 1985
Civic Auditorium and Brooks Hall
San Francisco

AN INVESTMENT WITH IMMEDIATE RETURNS

TO: Computer Faire, Inc
181 Wells Avenue, Newton, MA 02159
(617) 965-8350

YES. I want to preregister. I understand that a 3-day ticket is FREE if I also enroll in any Professional Development Seminar.

Professional Development Seminars

	Code #	No. of Tickets		
Half Day Sessions:	_____	_____	@ $60	$ _____
Full Day Sessions:	_____	_____	@ $100	$ _____

Please send me:
___ 3-day tickets @ $12 ea. $ _____

TOTAL Fees Enclosed $ _____

Name _____
Address _____
City _____ State _____ Zip

MT

SAVE $3 Preregister Today
Only $12 for full 3-day conference and exhibits. Complete this form and mail with your check by August 16.

Guaranteed returns include:

- **You can compare state of the art microcomputer hardware, software and peripherals from 250 leading companies;**
- **A free comprehensive conference program providing microcomputer solutions for your business, profession and home;**
- **Scores of free hands-on-demonstrations allowing you to try before you buy;**
- **Free one-on-one sessions with professional computer consultants will provide the answers to your specific questions.**

An exclusive production of **Computer Faire, Inc.**/A Prentice-Hall Company

Macintosh™ Computers

WEEKLY **FOR RENT** MONTHLY
QUARTERLY **FOR LEASE** ANNUALLY

Macintosh Laserwriters™

The Macintosh Specialists
Serving Business Throughout The Bay Area

(415) 824-7440 **RENT-A-MAC inc.** (408) 292-1292

REVIEWS

EDUCATIONAL SOFTWARE

divided into six functional areas:

BANNER
COPY DESK
LAYOUT
PHOTO LAB
PRESS
WIRE SERVICE

A function can be selected from the keyboard, a joystick or other controller. The Koala Pad is particularly suitable for use with *The Newsroom;* I found that in drawing graphics or making certain menu selections the cursor tended to jitter around too much when I used a joystick. The graphic tool kit provided in *Newsroom* is almost identical to the software provided with the Apple Koala Pad.

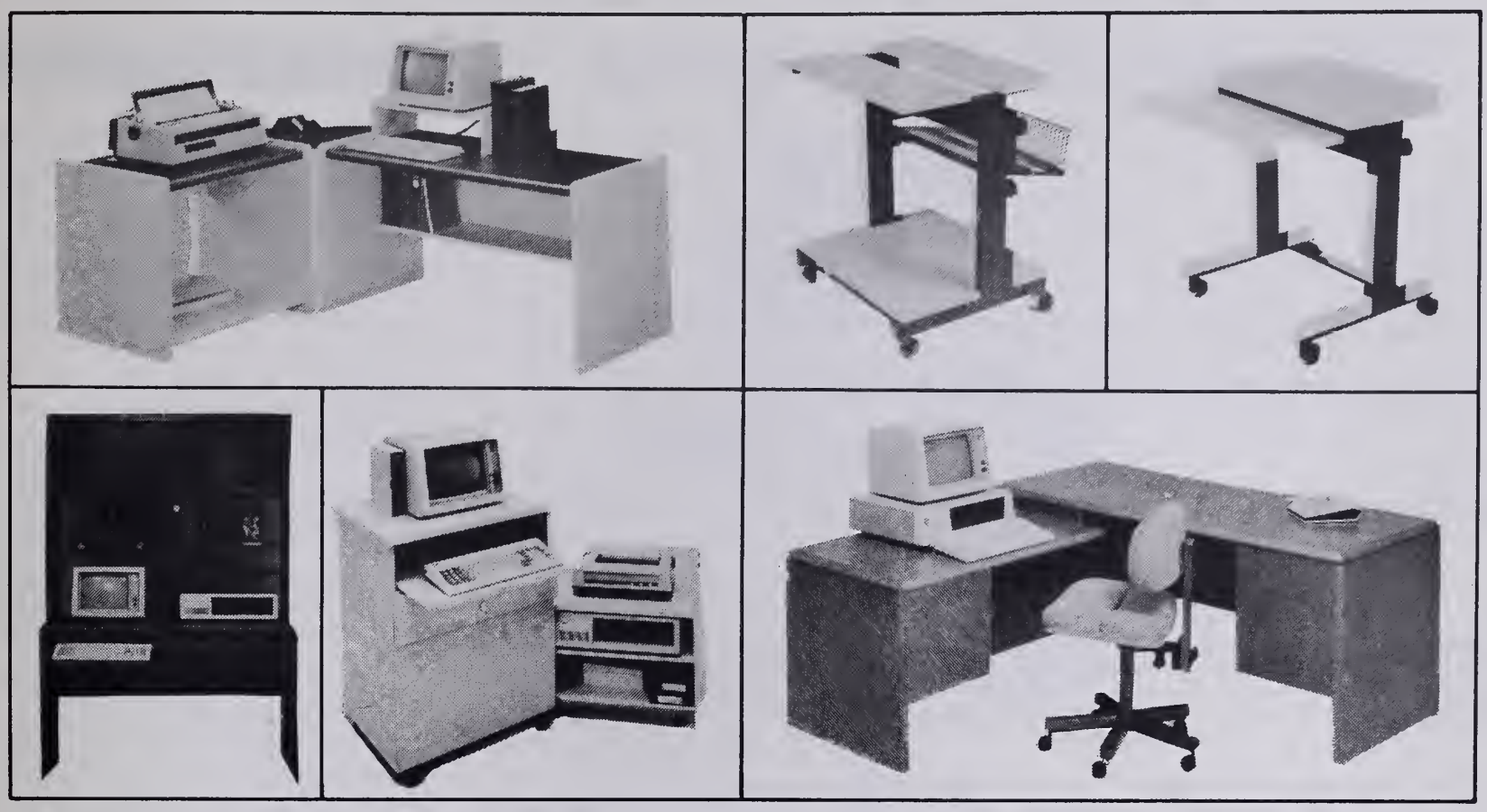
BANNER is used to compose the logo or "flag" across the top of a page. Five text fonts are available for use: An Old English, Sans Serif (very plain) in large and small sizes and Serif (rather handsome) in large and small. Any mix of graphics from the clip art disk can be incorporated into the Banner. Here we run into the first real shortcoming of the program: graphics can be modified or cropped, but they cannot be enlarged or reduced. Graphic enlargement or reduction can be done on an Apple II, but the software required would probably not fit on the tightly packed *Newsroom* master disk. Fortunately, the 600 graphics in the clip art file are diverse enough that you can usually find or modify something to fit.

COPY DESK is a simple word processor used to create blocks of text. *Newsroom* gives you the option of printing on letter- or legal-sized paper; the bigger sheet can hold more "panels" of text. Two type sizes and any mix of graphics can be used in a single panel. This is not exactly *MacWrite/MacPaint,* but it gives you tremendous freedom. The entire panel is treated as a single bit-mapped graphic, and must be saved to a separate disk. The "word processor" function is disappointing for anyone who has used a real word processor. It cannot writeover, justify, or move blocks of text (unless you move the whole panel on the page). Underlining could be done with the graphics tool kit, but this is awkward. You cannot review the entire page before printing it, since only one panel can appear on-screen at a time. The best approach is probably to write and edit your text on another word processor before entering it into the COPY DESK. This is a reasonable simulation of how a real newspaper works.

The LAYOUT function is used to arrange panels on a page. Each panel is read into memory from the disk where you stored it, then saved onto another "page" disk that will be used by the PRESS function to print it out. There is a lot of disk swapping, even with two drives. With one drive, it would be even worse, but the program gives good prompting, and traps errors smartly. If you are working with a lot of text, you must keep a record of what each panel contains, or you can easily get lost. A panel has a file name of up to eight characters.

In the PHOTO LAB you create, modify and save graphics. Any piece of clip art must be processed through the photo lab before you can use it in a panel. By selecting the "flip" icon, you can reverse any graphic to its mirror image (this is a nifty bit of programming that greatly increases the usefulness of the art file). Another excellent feature is the OOPS! icon, which undoes what-

LOOKING FOR COMPUTER FURNITURE . . .

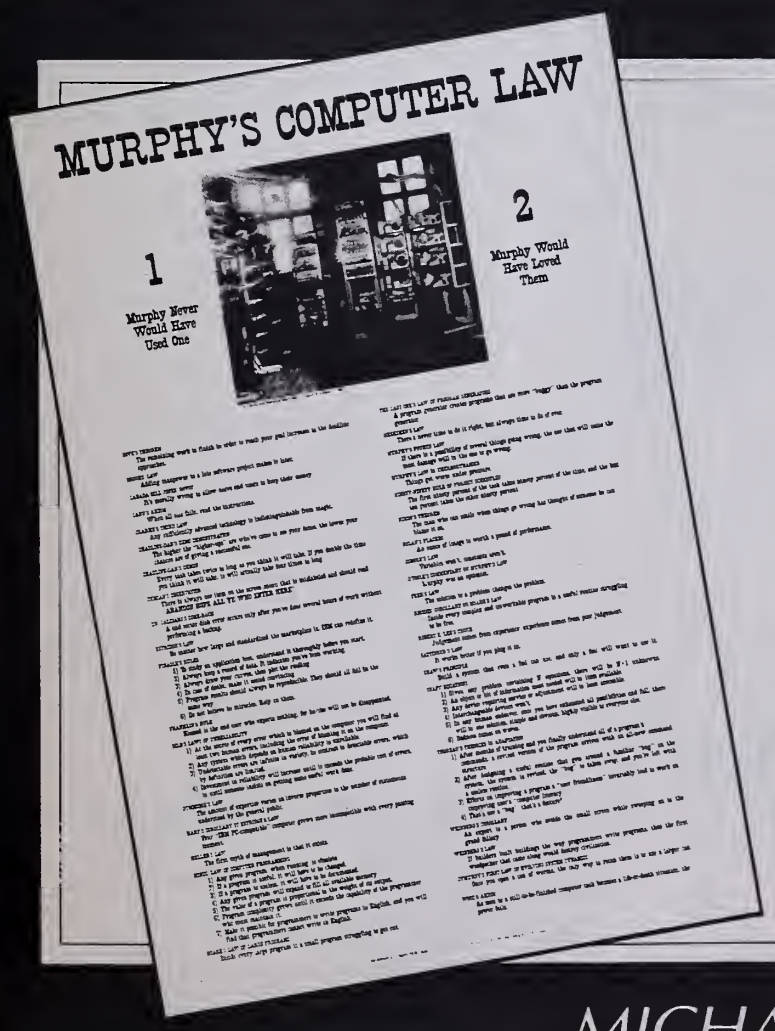


COMPUTER FURNITURE

1215 EL CAMINO, BELMONT

C · O · M · P · A · N · Y

(415) 592-7584 OPEN 10-5 MON-SAT



What can go WRONG . . . will go wrong!

Murphy's Computer Law Poster

38 crazy laws that tell the sad but funny truth about the computer industry. Great poster for office walls. Send $11.95 (Calif. residents add appropriate sales tax) plus $2.00 shipping and handling, check or money order.

Also:

RESERVED

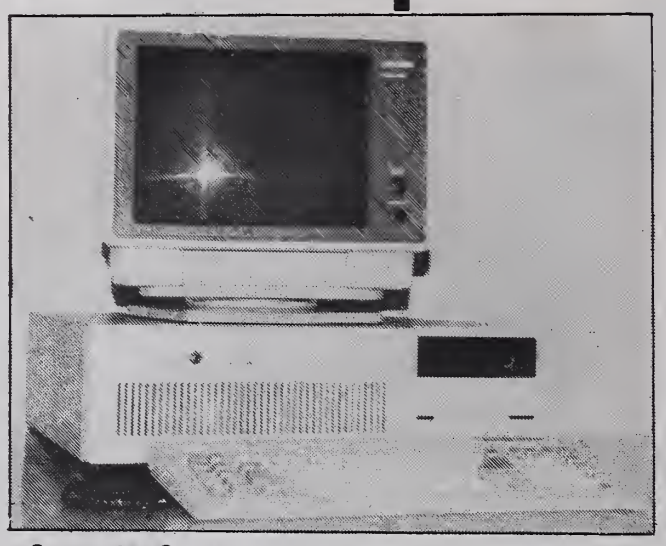
Computer Novelties Catalogue

Unique gifts and gadgets for the user.
Send $1.00 for your copy now!

MICHAEL A. SCOTT
INCORPORATED

466 Crescent, Penthouse One • Oakland, CA 94610 • 415 444 1888

NOVA PC/XT/AT-Top Of The Line IBM Compatible Computer



Features:
- Affordable priced **PC/XT/AT** computer
- Runs PC, MS-DOS, CPM/86
- Of Course, this versatile computer runs Flight simulator, Lotus 1-2-3, Symphony, Framework, Peachtree, D Base II & III, PC Paint, Auto C.A.D., . . . and tons of software.
- We have a demo system available for your testing.
- OEM, dealer inquiry welcome

NOVA/AT IS AVAILABLE NOW

Computer System

NOVA PC Bare Bone $695
Includes: 64K mother board, case, 130W power supply, keyboard, floppy controller card

NOVA PC 256K $1295
Includes: keyboard, 130W power supply, 2½ ht. dr., 6 pack compatible multifunction board, color graphic card, 4-drive controller card

NOVA XT 256K $1895.00
Includes: keyboard, 130W power supply, 2½ ht. dr., 6 pack compatible multifunction card, color graphic card, 4-drive controller, 10MB hard disk, DTC hard disk controller

NOVA AT Entry Model $2650.00
Includes: NOVA AT 256K mother board, Intel #80286 CPU (option 1MB)
(Option: IBM) 195 W power supply,
1.2MB floppy drive, hard disk/floppy controller

NOVA AT Enhance Model $3995.00
Includes: NOVA AT 1MB mother board, Intel #80286 CPU (Option 1MB), 1.2MB floppy drive, 20MB hard disk, 2 Serial/1 parallel card, 195W power supply, keyboard.

Upgrade Kit for PC to XT

Internal, 10MB H.D. + DTC controller $595
Internal, 20MB H.D. + DTC controller $695
Internal, Irwin 10MB tape back-up with cartridge and cable, free installation $595
High quality XT 130W power supply $95
NOVA external, 20MB hard disk drive $995
NOVA external, 10MB tape back-up system. $850
NOVA external case for hard disk and tape back-up drive with 50W power supply/fan. $175

Disk Drive and Monitor and Accessories

Teac 55B½ ht. 360KB floppy drive $105
Keytronics compatible #5151 keyboard. $130
Hitec keyboard. $130
Amdek 310A (amber monitor) $147
Amdek 310A or Quimax amber monitor. $147
Amdek 700 or Quimax Color IV $425

Nova Series Add On Board

NOVA mother board w/installation manual $79
NOVA 6 function board w/64K (Ast 6 pack compatible) $135
Mono-Chrome board $120
Color-graphic board w/printer & game port $120
Floppy controller w/cable. $75

Computrade Company

Main Office: Computrade Company
780 Trimble Road, Suite 605
San Jose, CA. 95131
Tel: (408) 946-2442

So. S.F. Branch: Sun Systems
1203 Grandview Drive
So. San Francisco, CA. 94080
Tel: (415) 875-6888

COMPUTER RENTAL

Monthly - Weekly

IBM * COMPAQ

micro Computer Support, inc.

computer rental ~ systems design & consulting

330 Townsend St • San Francisco, CA 94107 415 / 777-2112

ever you did last, making major errors correctable. The available images on the clip art disk include lots of animals, some kids, U.S. and world maps, people doing various things, symbols of all sorts, vehicles, trees, the Statue of Liberty, the MasterCard and VISA logos, and some large-font words. If you don't find what you want, you can make it up from scratch. All the graphics are illustrated and indexed in the manual. It should be possible to use graphics created by other programs in *Newsroom*, but no technical notes are provided to facilitate this. Another major complaint is the lack of any quick reference card. Because of keyboard and hardware differences, the II+ and IIe have some very different ways of commanding *Newsroom*, and the beginner will spend a lot of time shuffling through the manual.

The PRESS is very simple to use. A setup menu provides for every imaginable dot-matrix printer and interface card. Any single banner, panel or photo can be printed out separately, as well as an entire composed page.

Finally, WIRE SERVICE is a modem utility that makes it possible to transmit or receive finished pages, panels or graphics from a remote computer, even of a different brand. Hayes-compatible 300 and 1200 baud modems are supported.

The quality of the output from *Newsroom* will depend on your printer and the condition of your ribbon, but in general, some of the larger typefaces and graphics will benefit from a little touch-up with a fine-tip felt point pen to even out the jagged lines. For reproduction, the copy machine should be set for the highest contrast, to improve legibility.

My overall evaluation would rate *Newsroom* as excellent on performance and error handling, good on ease of use, and fair on documentation. The manual contains a "Guide To Creating A Newspaper" written for the junior high school level, a nice little annotated Bibliography, and an appendix of proofreader's symbols.

In many ways, this product was crippled by the market requirement that it run on a 64K machine. It is amazing that the programmers were able to do so much, but they deserved a bigger slice of RAM to work with. When compared with a graphics package like *Fontrix* or *Dazzle Draw*, this package seems very limited, but for a beginner there is, perhaps, enough. This is, after all, intended as a learning tool, not a production utility.

The manual does not give any design or programming credits, which is regrettable, since we would like to know the people behind the product. The program is copy-protected, but a replacement can be obtained for $5.00 plus the original disk. An 800 telephone number for support is given at the end of the manual.

The Sea Voyagers

Developed by *Neosoft*
Published by: *CBS Software (1984)*
For: *Apple II+, IIe and IIc (Commodore and IBM PC versions forthcoming)*
Reviewed by: *Mike Markowitz*

Many of the products that pass for "educational software" are just electronic babysitting for younger kids and electronic page-turning for older ones. So it is a special delight to find a really well-designed software package on my own favorite topic: History. Many kids hate history be-

"COMPLETE" Macintosh Systems

1 MB System . . . . . .**Only $3295.00**
Includes: External Disk Drive, Image Writer Printer, 90 Day Warranty, Full Linear RAM
100% compatible with all software
512K Systems also available

UPGRADES

1 MB

128K - 1MB Only $825.00 (nothing extra to buy)

512K-1MB Only $599.00 ROM enhancement included

512K

128K-512K Only $225.00

Lisa, Apple IIe & IIc Upgrades also available

All Upgrades Include:

- FREE RAM Disk
- Print Spooler (Optional)
- FREE Switcher 4.0
- Socketed RAMs
- Top Quality Parts (Better than Apple)
- Discount Hardware and Software
- **Full Credit towards larger upgrades**
- Access to Freeware Library
- **1 Year Guarantee on Parts and Labor**

- ***100% Compatible with all software!***
- ***Over 200+ upgrades performed!***

julian SYSTEMS

953 De Haro, San Francisco, CA 94107
An Affiliate of The Julian Theatre

CALL NOW
(415) 647-5525 or
800-447-2300
M/C, Visa accepted

SUBSCRIBE

Keep up with California computer news. If you're having trouble finding MicroTimes in your area, get your own personal copy delivered by mail.
California has needed a magazine for computer users and MicroTimes is it!

Send me the next 12 issues for $12.

☐ cash enclosed ☐ charge card

Visa/Mastercard # _____

Expires _____

Signature _____

Name (please print) _____

Address _____

City _____ State _____ Zip _____

Mail to: MICROTIMES Subscriptions
5951 Canning Street
Oakland, CA 94609

COURSES FOR EVERYONE FROM BEGINNER TO PRO!

- INTRO TO COMPUTING AND BASIC.
- PREP FOR 'C' FOR BASIC USERS.
- 'C' LANGUAGE COMPLETE COURSE: 4 WEEKS, 24 HOURS OF INSTRUCTION.
- 8 HOUR INTENSIVE SEMINAR IN 'C' FOR PROS.
- PROS: YOUR NEXT CAREER CAN BE VERY FULFILLING: LEARN TO TEACH.

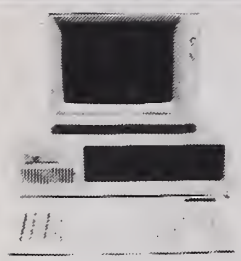
CLASSES LIMITED TO 12 STUDENTS.
ENROLL EARLY TO INSURE YOUR PLACE.

CENTER FOR PROFESSIONAL GROWTH

292 9TH AVE.
SAN FRANCISCO, CA
415/ 751-2936

LOWEST PRICE HIGHEST VALUE

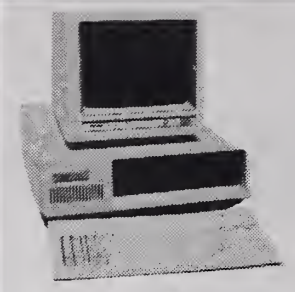
CALL FOR LATEST PRICES



$995.00

FULLY IBM PC/XT COMPATIBLE

- 256K MEMORY
- 2 x 360K TEAC DISK DRIVES
- 8 EXPANSION SLOTS
- 130W POWER SUPPLY
- FLOPPY DISK CONTROLLER
- IBM COMPATIBLE COLOR GRAPHICS CARD
- TAXAN GREEN OR AMBER MONITOR
- IBM STYLE KEYBOARD



FULLY IBM PC/XT COMPATIBLE COLOR SYSTEM

- 256K MEMORY
- 2 x 360K TEAC DISK DRIVES
- 8 EXPANSION SLOTS
- 130W POWER SUPPLY
- FLOPPY DISK CONTROLLER
- IBM COMPATIBLE COLOR GRAPHICS CARD
- TAXAN HI RESOLOUTION COLOR MONITOR
- IBM STYLE KEYBOARD

PRINTER SPECIAL

CITIZEN™

CITIZEN™ MSP-10 FEATURES

- Switch-selectable compatibility provides software versatility
- Sleek, modern design for quiet operation and excellent reliability
- Excellent throughput with 160 cps print speed
- 40 cps correspondence-quality printing at the flick of a switch
- 80-column print width
- Unique push-feed paper loading system makes loading paper quick and easy
- The industry's longest warranty— 18 months on all parts and labor
- Engineered by the people who've become a wristhold word in fine, precision-engineered timepieces

$329.00

CITIZEN™ MSP-15 FEATURES

- Switch-selectable compatibility provides software versatility
- Sleek, modern design for quiet operation and excellent reliability
- Excellent throughput with 160 cps print speed
- 40 cps correspondence-quality printing at the flick of a switch
- 136-column print width
- Unique push-feed paper loading system makes loading paper quick and easy
- The industry's longest warranty— 18 months on all parts and labor
- Engineered by the people who've become a wristhold word in fine, precision-engineered timepieces

$429.00

MITSUBISHI 10 MEG HARD DISK W/CONTROLER

- FULLY DOS 2.X OR 3.X COMPATIBLE

$549.00

MITSUBISHI 20 MEG HARD DISK W/CONTROLER

- FULLY DOS 2.X OR 3.X COMPATIBLE

$689.00

130W POWER SUPPLY FOR FOR IBM PC OR COMPATIBLES

$99.00

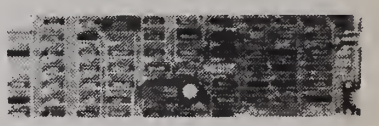
COLOR GRAPHICS BOARD

W/PRINTER PORT

- FULLY COMPATIBLE

WITH IBM COLOR BOARD

- PRINTER PORT
- RGB OUTPUT ONLY

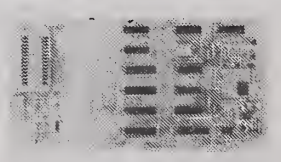


$129.00

MULTIFUNCTION BOARD

- SERIAL PORT
- PARALLEL PORT
- GAME PORT
- CLOCK W/BATTERY BACKUP
- W/SOFTWARE

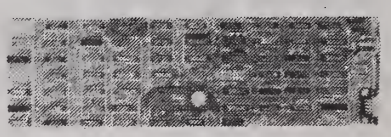
OK $149.00 384K $216.00



EPROM PROGRAMER

- 2716-27128 COMPATIBLE
- W/SOFTWARE
- VERY FAST OPERATION

$146.00



COLOR GRAPHICS BOARD

- FULL COMPATIBLE WITH IBM COLOR BOARD

$99.00

MONO BOARD

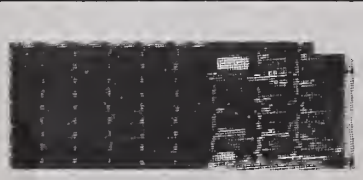
- 720-348 RESOLUTION
- LOTUS COMPATIBLE
- WITH PRINTER PORT

$159.00

FLOPPY DISK CONTROLER

- CAN CONTROL UP TO 4 DRIVES
- FULLY DOS 2.X AND 3.X COMPATIBLE

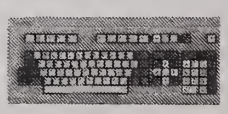
$69.00



384K RAM BOARD

- EXPAND YOUR SYSTEM TO 640K
- ON BOARD EXPANSION TO 384K MEMORY

OK $79 384K $139.00



KEYBOARDS KEYTRONIC COMPATIBLE

5151 SEPARATE CURSOR PAD & NUMBER PAD, W/LIGHTS ON NUM & CAPS LOCK & POWER LIGHT

$129.00

IBM-AT COMPATIBLE KEYBOARD AVAILABLE — CALL!!

5150 SAME STYLE AS IBM W/ BIGGER SHIFT & RETURN KEY W/ LIGHTS ON NUM & CAPS LOCK & POWER LIGHT

$79.00

OTHER SPECIALS

GAME PORTS
GAME PORT BOARD **$35.00**
AST. GAME PORT OPTION **$29.00**

300/1200 BAUD INTERNAL MODEM
W/SOFTWARE **$239.00**

10 DS/DD DISKS $11.00

IBM, MITSUBISHI, INTERDYNE, CITIZEN, AST, KEYTRONIC, TAXAN, HERCULES ARE TRADEMARKS OF THE RESPECTIVE COMPANIES.
SCC IS A REGISTERED TRADEMARK OF STANDARD COMPUTER CORPORATION.

STANDARD COMPUTER CORPORATION

1254 E. Colorado Blvd. • Pasadena, CA 91106
In Calif. (818) 792-6226 • Outside Calif. (800) 792-6229 (orders only)

VISA

© SCC 1985

EDUCATIONAL SOFTWARE

cause it is badly taught. The way to teach history badly is to emphasize facts: names, dates, places, exports, "contributions" etc. The way to teach history well is to rely on some of the things kids do best: empathize with people of other times and use imagination to reconstruct what it must have been like to fight in a legion, die of the plague, or discover radium.

The trouble is, you do have to know some facts to enjoy a study of the past. Software like *The Sea Voyagers* helps to make this learning relatively painless. The package includes the program diskette, a handsomely produced 30-page booklet, and two flexible vinyl keyboard overlays (one for the II+ and one for the IIe/IIc). All this is packaged in the sort of plastic box used for VHS video tapes.

Thirty explorers, covering the period 1450 to 1800, make up the content of the package. Portuguese, Spanish, Dutch, English, French and Russian voyagers are included; both the Big Names (Columbus, Magellan, Drake), and some delightfully obscure characters (Covilha, Willoughby, Roggeveen). The overlay gives each explorer his own key, and there are various function keys to select a game, input answers and toggle the sound on or off. "Explorer Profile," for example, displays five "windows" in high-resolution graphics for each explorer:

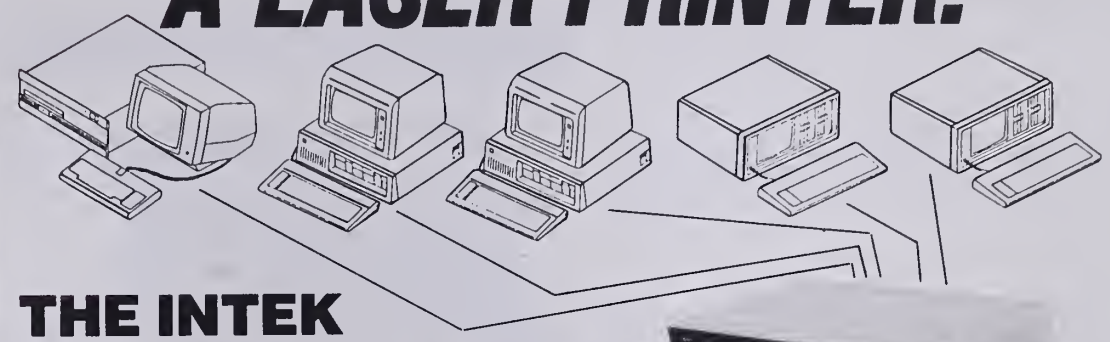
1. A portrait (for some individuals no portrait survives, and this is noted) along with dates and nationality;
2. A flag, along with the name of his ship (if known). As this appears, a snippet of national music is played;
3. A time line, showing the explorer's lifespan and the dates of his voyages;
4. A word map, on which each voyage is traced sequentially;
5. A scrolling text window, that taps out a few key facts about the person, his discoveries and fate.

All thirty explorers are white and male, but it would be hard to fault the designers of the software for ethnic or sexual bias — The Age of Exploration was a male, European show, with women in a supporting role (Isabella of Spain and Elizabeth I of England most notably). I did learn from the program, however, that the first woman to circumnavigate the Earth sailed with the French explorer, Bougainville. A surprising exclusion from the list of 30 is Alvar Nuñez Cabeza de Vaca (1490 – 1557?), the discoverer of Texas, who was probably a Black man.

The use of sound and color is superb, although a fanatic for historical accuracy would be appalled by the liberties taken with the flags and music. The manual makes apologies. Some teachers might have preferred the accurate information instead. Although the program is still effective and legible on a monochrome monitor, color is definitely an advantage. The ability to toggle off the sound is a blessing if many students are working on different programs on many terminals in a small room. The keyboard overlays will create some problems for owners of Franklins or non-standard Apple-clones, since certain keys will differ in position. This should have been covered in the manual! A toll-free number is provided for product support, however.

The "games" that drill and reinforce the material are varied and effective. They do not feel like "tests," although the feedback may include a

WHY YOU SHOULD CALL (408) 252-8900 IF YOU OWN A LASER PRINTER!



THE INTEK DATA MANAGER

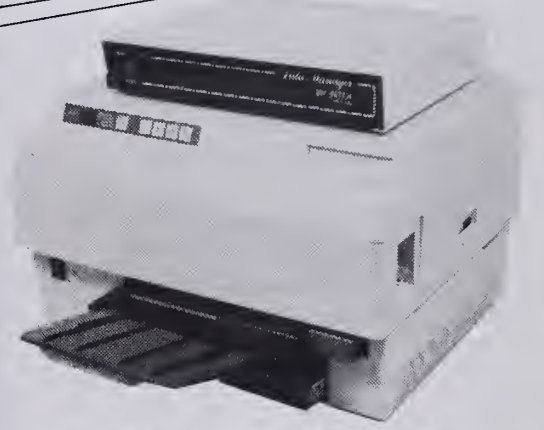
Allows 5 Computers to share one Laser Printer!

The Data Manager

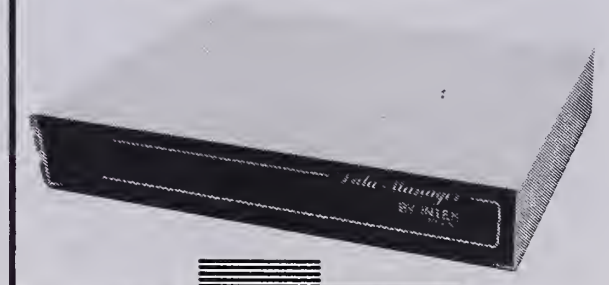
Only $495

Data Manager II $595

(4 in/2 out) (printer not included)



Z-80A MICROPROCESSOR 1-RS-232C OUTPUT PORT
5-RS-232C INPUT PORTS 64K BUFFER



INTEK MANUFACTURING INC.

"Integration for Tomorrow's Technology"

10200 Imperial Ave.
Cupertino, CA 95014
408-252-8900

FEATURES

- Any and All Computers Can Send Data At Same Time
- No Operator Switching or Setup Necessary
- Mix and Match Computers with Printer
- Data Manager Handles Each Incoming Device Independently
- Stores and Distributes Data Automatically
- Gives Five (5) Computers Buffering Capability

CALL FOR DEALER PRICING AND OEM DISCOUNTS

TRY THE #1 IBM-PC WORD PROCESSING VALUE RISK-FREE.

Wordvision® – awarded "highest Value-For-Money rating" by *Software Digest – now just $49.95**

WHAT OTHER REVIEWERS SAY: "Does most of what I need done in the way I need it done and does it better than programs costing 10 times as much." — *Rick Cook, Popular Computing* ☐ "A work of surpassing brilliance in concept, style, content and execution." — *Jim Seymour, syndicated columnist* ☐ "The list of features goes on and on. A solid product... A winner." — *Cynthia Harriman, Infoworld.*

WHAT WORDVISION CUSTOMERS SAY: "You're right — Wordvision clearly is superior to any word processor on the market, at any price" — *Dave Donaldson, Boston, MA* ☐ "My IBM Displaywriter orignally cost $14,000. But Wordvision matches it, and even surpasses it in many ways." — *Morris I. Chernofsky, NYC, NY*

WHAT WE SAY: Wordvision — fast, visual, intuitive — sets a new standard for ease-of-use *without* sacrificing power. There isn't room in this ad to explain what makes it so great — you just have to try it! So I invite you to order a copy risk-free. If Wordvision doesn't dazzle you, return it in ten days for a full refund. — *Jim Edlin, President, Bruce & James Program Publishers, Inc.*

**Software Digest Ratings Book*, 1984

• **ORDER WORDVISION NOW AT NO RISK** • **FOR MORE INFORMATION: 415/775-8400**

Visa/MC/COD — call **1-800-543-6277** Ext. 2050-G (in CA 1-800-368-7600 Ext. 2050-G) or mail $49.95 + $5 S&H to:

Bruce & James, Inc. 2355 Leavenworth – Suite 103-G, San Francisco, CA 94133

WHAT YOU NEED: IBM PC or 100% compatible, DOS 1.0 or higher, 80-col. display, 1 disk drive.

EDUCATIONAL SOFTWARE

score. "Who goes there?" is a guessing game, in which the objective is to guess the explorer's name from the fewest facts (after five facts have been presented, the program displays the answer if you have not yet guessed correctly). "Explorer Mix" requires the player to unscramble mismatched portraits and facts.

The reading level of the material is suitable for fourth or fifth grade, but the program would be a useful supplement to any teaching unit on the Age of Exploration up through high school level. As a teacher, I would use it alongside *Seven Cities Of Gold*, Electronic Arts' award-winning simulation of the discovery of the New World. As a print-media dinosaur, I can only envy the kids who have such tools for learning.

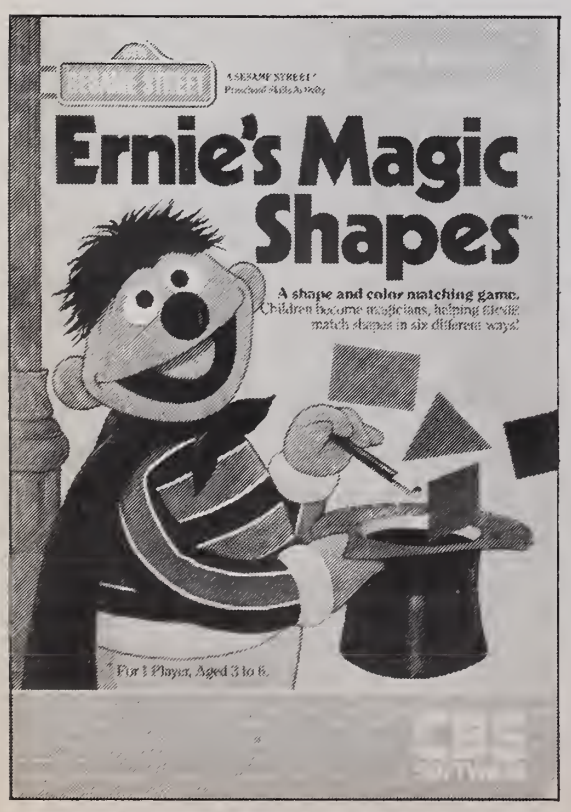
Ernie's Magic Shapes

Published by: *CBS Software and the Children's Computer Workshop*
For: *IBM PC, PCjr, Atari, and Commodore*
Reviewed by: *Doug Pencille*

With school just around the corner again, it's time to justify the expense of the home computer for the educational software for the kids. There has been a lack of quality educational programs for preschool and grade-school children. Either the programs are too complex, or they're too simple and the educational value just isn't there. It seems that when the program does have something to offer educationally, the kids just don't care enough about the subject matter to use it.

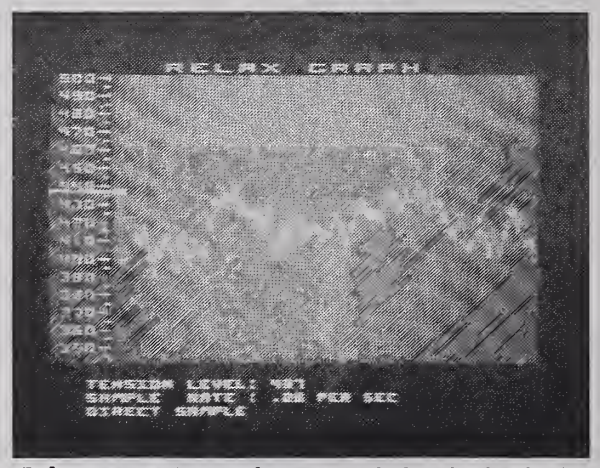
I don't think that there is a child, or a parent with children for that matter, who is not familiar with the Children's Television Workshop and *Sesame Street*. For those who are, the amount of things picked up and repeated by the children is incredible. The characters have some kind of power over the kids, who learn from them to an amazing degree.

Ernie's Magic Shapes is a simple visual skills game for pre-school ages 3 to 6. The game requires the child to discriminate among six different shapes in six different ways. The child acts as the magician, helping Ernie to match the shapes. The child is rewarded by Ernie and his magic bunny for correct answers, and the program will wait as long as it takes for the child to come up with a proper match. The use of color graphics and screen movement help to keep the attention span and entertain the child, while providing the important concept of shape identification.



Ernie's Magic Shapes **lets preschoolers help their little pal sort shapes and recognize colors.**

SELF-HELP SOFTWARE



Relax **uses various techniques including biofeedback and hypnotic graphics to help you beat the day-to-day stress we know and love.**

Relax!

Published by: *Synapse Software Corporation/ Broderbund*
For: *Apple IIe, IIc, Atari 800XL, 130 XE, Commodore 64, IBM PC and PCjr.*
Suggested retail: *Atari/Commodore $99.95; Apple/IBM $139.95*
Reviewed by: *Cindy Becker*

Would you like to reduce your stress level with remarkable ease and enjoyment? Use of *Relax* promotes stress reduction by recording muscle tension, a reflection of total physical tension, and by displaying it in an electromyograph readout, a "sensoral kaleidoscope," or a balloon game.

Does this sound complicated? Well, relax, it's not! The system consists of four components: audio cassette tape, headband, electromyograph (EMG) unit, and *Relax* diskette. On tape is a relaxation exercise which helps you associate your tension and relaxation levels with what is happening on the monitor screen. A comfortable corduroy strap with velcro strips holds three metal sensors against your forehead. The EMG unit is light and compact, about the size of a small modem. Range and fine tune sliding controls adjust its sensitivity to your level of muscle tension. The diskette contains the graph, kaleidoscope, and game programs.

Set-up and operation of the system is pleasingly fast and simple. It takes less than five minutes to apply the headband, plug its cord into the EMG unit, and plug the unit into a control port. One nicety is the headband's long cord which can stretch to the easy chair you might want to use.

The graph readout is quite sensitive; it looks like an earthquake seismograph recording. The balloon game is fun: as your tension levels change, you guide the path of the floating balloon while you dodge tacks or attempt to catch suspended bubbles. I find, though, that the best part of the system is the kaleidoscope program. It induces relaxation by employing hypnotic-like techniques. Patterns coalesce, break apart, and change colors in relation to varying depths of relaxation. Accompanying the patterns is soothing, cosmic sounding background music. The combination of spectacular color patterns and peaceful music mesmerizes me.

The documentation discusses learning how to relax, and how to incorporate the system's application into one's daily routine. It reviews some basic principles of biofeedback.

Relax is an easily utilized program designed to help you feel more calm and refreshed during this time of stressful living.

BOOKS

The Spirit Of Enterprise

By: *George Gilder*
Published by: *Simon and Schuster, New York, NY 1984*
Reviewed by: *Robert D. Athey Jr.*

The story told by this author is an excellent encouragement to the entrepreneur to try, fail, and try again, bankruptcy be damned. If you know your field, and have vision that makes you see the niche where your start-up business can succeed, DO IT! The majority of the book deals with polemics of how our economy (and Japan's) are run, and how the entrepreneur succeeds in spite of the inhibition by government and big business. He describes, as his examples, the start-up of Apple, Osborne, Honda, Sony, and other businesses. His key point is that there is an experiential manufacturing cost/pricing relationship that makes the product attractive to the buyer on technical and economic merits. He has hard words to say against protected mature industries, which, he says, are essentially taxpayer subsidies. The rise of Micron Technology in the face of government subsidized research and development disasters is a demonstration that the entrepreneur can indeed succeed — when he knows the field, and pays attention to details of personnel and technology.

Although there is the strong message for the entrepreneur in this book, I think the effectiveness of the message is somewhat diluted. The author starts out well, with the J.R. Simplot story, but I would rather have seen such examples gathered closer together, with a chapter for each company's story containing a topical moral or tip or clue to their success. If there is then a need for polemics on tax treatments, inappropriate accounting in the Commerce Department's estimates of productivity, import/export regulations and gyrations, and big business subsidy, let us have them separately, in other later chapters (or books, even). As an independent businessman, I'm much more interested in the stories of the entrepreneurs than the obtuse governmental and big business frivolities that don't affect me much, or that I can't do much about, anyway. Even wading through all that, the stories I've highlighted, and others, were worth the slough.

The World of UNIX*/XENIX* Made Simple

Our menu-driven shell, especially created for the UNIX system, provides you with a menu-driven environment without limiting the system. **MIGHTY MENU** simplifies the UNIX system and saves you time and money.

FEATURES:

1. Customized menus and user environments. **MIGHTY MENU** makes UNIX easy to work with, but does not limit the flexibility of the UNIX system.
2. Novice users can interact with **MIGHTY MENU** without any UNIX training.
3. Experienced users will find **MIGHTY MENU** a convenience and a time-saver. The **MIGHTY MENU** shell can be tailored to meet the needs of any user.
4. System managers will enjoy the organizational powers of **MIGHTY MENU.** In addition, users can be limited in their access to the system, if desired.

DPI, INC.

(415) 593-1898

1775 Old County Road #3 Belmont, CA 94002

* MIGHTY MENU™ IS A TRADEMARK OF DPI, INC.
** UNIX™ IS A TRADEMARK OF BELL LABORATORIES
*** XENIX™ IS A TRADEMARK OF MICROSOFT, CORP.

We Excel in Computer Service & Repair

Authorized Dealer and Service Center

OKIDATA Qume® JUKI®

SERVICE WARRANTY AVAILABLE
60 DAY WARRANTY ON ALL WORK

COMPUTERS	PRINTERS	FLOPPY DRIVES	MONITORS
IBM PC, XT, JR, AT	QUME	**SIZE:**	ALL BRAND NAMES
APPLE II, II+, IIe, IIc	EPSON	3½", 5¼", & 8"	COLOR
COMPAQ	OKIDATA	**DENSITY:**	GRAPHICS
Other IBM	JUKI	SSSD, SSDD, DSDD	MONOCHROME
Compatibles	C.ITOH	**DRIVE ALIGNMENTS $45**	
		COMPONENT REPAIR $45/hr	

UPGRADE YOUR SYSTEM WITH THE VERY BEST!

TEAC FD-55B
- 1/2 height
- 1 yr. warranty

$119

10/20/46 MB HARD DISK
w/controller
$645/895/$CALL

Unix-C Seminars
- Introductory Courses
- Advanced Programming in C
- Unix & C Overview for Business Managers

Classes limited to 5 students only
Hands-On Workshops Using Inhouse Unix System V Based Four Phases 6300 Computer System.

V-TEK PC SERVICE

122 Second Ave., Suite 214
San Mateo, CA 94401
(415) 348-6723

San Jose
(408) 238-5587

Inventory Clearance Sale

Buy Direct From The Distributor and Save

	LIST	OUR PRICE
MODEMS		
Prentice P-212 ST		
1200 Hayes Compatible	$325	**$275**
US ROBOTICS		
Password 300	199	**119**
Password 1200	449	**265**
Auto Dial 212 A	599	**415**
Personal Communicator (IBM Board)	499	**300**
MICROCOM		
Era 2 Apple IIe (error correcting)	499	**387**
Era 2 PC/1200 (error correcting)	499	**387**
Era 2 PC/2400 (error correcting)	799	**619**
GILTRONIX AB SWITCHES		
2 way RS 232	119	**80**
3 way RS 232	169	**115**
2 way IBM PC Parallel	140	**95**
3 way IBM PC Parallel	180	**120**
IBM CARD		
Comway Comgraphics Color Card		
Hercules Compatible	399	**240**

Soundproof Printer Enclosures From CAB-TEK
Please call with your printer model # for enclosure price.

LCO Technical Sales

750 Camden Ave., Suite A,
Campbell, CA 95008

408/378-9900

Chuck Barkas, Ken Heggem and Dave Smith attribute the success of Trans West to low overhead, technical skills, good products and a harmonious organization.

Trans West

12 South First St.
Suite 500
San Jose, CA 95113
(408) 292-4500

Trans West, located in San Jose, has been prospering over the last two years selling computer components to Original Equipment Manufacturers. Still, because of the industry slowdown, the company had to find an alternative market to maintain its profits. A few months ago, Trans West redirected its services and began selling the Trans West PC-XT, an IBM clone, in various stages to Value Added Resellers. Says Chuck Barkas, a partner who initiated the change, "Now, a VAR could literally go in our stockroom and start with a basic IC, then add other IC's and hardware, and end up walking out with an IBM clone computer under his arm. We're a one stop shop."

Changing over from the OEM market to the VAR front may prove to be most lucrative for Trans West. With their sales figures already running at $5 million a year, partners Ken Heggem, Dave Smith, and Chuck Barkas predict Trans West will firmly be among the top fifty distributors by 1987. Heggem is confident they can achieve this goal and says, "We are in a high growth marketplace and we take our profits and turn them right back into buying new products, development, and technology. We've actually changed our location four different times in the last two years to bigger and bigger office spaces."

But Barkas is quick to point out, "If you look at most of our other competitors, you'd see that they operate from a fairly large building with huge expenses. The buildings are stocked with hundreds of people and contain a lot of warehouse space and equipment. With us, we don't have a high overhead, so we can afford to buy in high volume at discount prices, something which the VAR's can't always do. We can then turn the merchandise around by offering the same product, same quality, and same warranty at generally very competitive prices."

In addition, Smith says, "Trans West still caters to the OEM's, but also does system analysis for IBMs and compatibles; we are also in the planning stages of setting up a dealer representative network throughout the United States and Canada."

Oddly enough, Trans West may not have ever existed if it wasn't for Heggem's sister-in-law Kathy Smith, who is employed at another San Jose computer firm. Over three years ago, she persuaded Heggem, then an owner of two service stations, to work as a computer salesman for her company. At first, Heggem was hesitant and recalls, "I knew what a water pump was, and if someone wanted a tune-up, I could do it for them. But if you wanted me to do something which revolved around computers — forget it. At the time, I didn't even know what a chip looked like." Eventually, Smith convinced Heggem that he could make a comfortable living as a computer salesman and he accepted the position. A year later, Heggem felt he had learned the ropes of the business and along with his Hawaiian partner Dave Smith, founded Trans West in July of 1983.

Earlier this year, Heggem and Smith tapped Barkas, a marketing manager for International OEM in Europe, to come and work for Trans West. "I knew Ken and Dave through a chain of events," says Barkas. "Because the market was falling over the edge of the cliff in Europe, I saw my own forecast and thought, 'I'd better get back to the U.S. since it's not happening here!'"

Barkas says the key to Trans West's success is its unique combination of technical skills, high technology products and an aggressive, harmonious selling organization. Adds Smith, "I feel that by giving our employees really good incentives and treating them like family, they all have alacrity when they come to work. All of our salespeople work hard to make Trans West succeed."

Barkas also feels that being situated in the Silicon Valley has certainly had its advantages. He remarks, "Where else can a former mechanic, a guy who lived in Europe for 15 years, and someone from Hawaii who was a regional all-star basketball player in college come together and form a blossoming computer business?"

— *Tim Tyler*

Software For Less

37 Vicente Street
San Francisco, CA 94127
(415) 753-1066

With over 575 computer products to choose from, of which 95% are Macintosh-oriented, Software For Less could be described as a Mac user's paradise. "The particular quantities of Macintosh products we have in stock are greater than anyone else's in the country," says Ron Shafer, the store's owner.

While Shafer is undoubtedly pleased with Macintosh, his ultimate joy is giving service and satisfaction to his customers, whether they're Mac supporters or not. "Satisfying the people who come in here is really what my philosophy is all about," he stresses. "I don't fuss with the people. If someone figures they're entitled to a discount or a new computer to replace one which didn't function correctly, I'll give them what they ask even if I lose money on the deal. I just want the customer to walk away from here with a comfortable feeling. Everything we do here is service-related."

To exemplify Shafer's customer-service policy, Software For Less does almost any type of computer repairwork; they also offer consulting. "I'll fix practically anything that we sell," declares Shafer. "With the exception of the Atari and Commodore systems, we do a wide range of repairs. If I can't fix it and the customer is dissatisfied, then I'll replace it." As for consulting, Shafer says he has the simple answer to all your questions in the person of Gilbert Rank, a 16-year-old computer guru who works at the store on Saturdays. "He's a real whiz-kid," compliments Shafer. "If he can't figure out the answer himself, he certainly knows where to get it."

Along with consulting and repairwork, Software For Less sells hardware and software. All software and accessories are a flat 20% off retail price, while hardware varies from twelve to fifteen percent discount. Shafer's store also has the unique distinction of being San Francisco's only authorized Beck-Tech dealer. In addition, his business is also authorized to sell NCR and Victor merchandise.

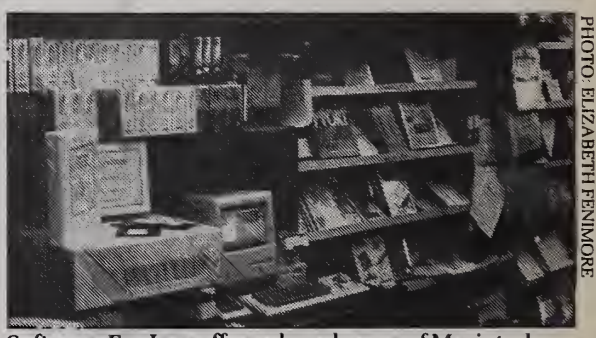


PHOTO: ELIZABETH FENIMORE

Software For Less offers a broad range of Macintosh-related products and a commitment to customer satisfaction.

Shafer's store seems to be making quite a name for itself as a source for Macintosh—and not just in the immediate area either. "A lot of user groups from all over the country have heard of us, and I've had customers as far away as Paris, Australia, and England. But I deal mainly with the home user; we don't deal with the big businesses anymore."

Shafer himself might not have dealt with the thought of having his own business if fate hadn't intervened. He was working as a battalion chief for the Mill Valley Fire Department when an injury forced him to retire in 1981. Shafer had always had an interest in computers but he never pursued it until after his retirement. He enrolled in Control Data Institute and graduated with honors. Unfortunately, the school never taught him anything about microcomputers, just mainframes. "So," Shafer explains, "I had to learn the microcomputer trade by myself by running the store which I opened in 1982 and doing some research on it at home. I really didn't know anything about microcomputers. In fact, when the store first opened, I put up $50,000 for a Victor dealership and when they delivered all of the machines, I had no idea where the on and off switch was."

Things have changed these days. Shafer knows his business and resolves to always try to please his customers, no matter what it takes.

— *Tim Tyler*

De Anza College
Fall Classes Begin
September 23

Courses In

Intro to Data Processing
Computers and Society
Computer Literacy
Beginning and Advanced
Classes in FORTRAN,
BASIC, PASCAL, COBOL
Algorithm Design
File Management
Computer Graphics
Survey of Computer Languages
Accounting Systems
Plus Much More!

Register Now!
De Anza College - 21250 Stevens Creek Blvd.
Cupertino, CA 95014
(408) 996-4760

Up Your Mac™ With A 512K or 1, 1½, or 2 Megabyte Ram Upgrade

We ship you a complete, reworked board!
Use our tools to swap boards and return the old one to us.

The VOAD Advantages:

- No loss of use
- No shipping your MAC™
- 120 day warranty
- FREE Mac Memory Disc™
- Immediate Availability
- Big Savings on 1024K

Dealer Inquiries Welcome

VOAD SYSTEMS™
3304 Pico Blvd.
Santa Monica, CA 90405

Place Your Credit Card Order By Phone:
Call Us, We'll Ship C.O.D.
(213)207-8866

™ MacINTOSH is a trademark of Apple Computer, Inc.
™ Mac Memory Disk is a trademark of Assimilation Process

Diablo® Printer Specialists

- Certified Diablo Service Center
- Repairs • Printer Sales • Service Contracts
- Recertified "Like New" Letter Quality Printers
  630's from $875
  620's from $550
- Interfacing and Consulting

— We Know How —

EXPANSION PRODUCTS SERVICE COMPANY **(415) 965-7222**
Mountain View, CA

MICROTIMES CLASSIFIEDS WORK!

USED COMPUTERS

Buy from the FIRST in the Nation
Buy from the BEST in Experience

NEW MERCHANDISE

IBM Compatible Portable....$1395.00
256k, 2 DS/DD Drives, Color Graphics, Serial & Parallel Ports

Paradise Multi-Display Card.....$249.00
Supports Color Graphics, Monochrome Text & Parallel Printer (List Price $459.00)

APPLE BOARDS
100% Grappler Compatible.....$65.00
Z-80 Card.....$79.00
X-80 Column Card for IIE.....$89.00

USED MERCHANDISE

ITT Systems.....Call

Apple II+ System.....$695.00
Includes: Apple II+ 64k, Disk Drive, Disk Controller, 12" Green Monitor, DOS 3.3

Diablo 630 (serial).....$795.00

Okidata 2350.....$1189.00

NEC 3550 Parallel.....$995.00
w/Tractor & Cutsheet Feeder

IBM Boards.....Call

Apple 80 Column for IIE.....$45.00

The Lowest prices on:
IBM • APPLE • KAYPRO
COMPAQ • OSBORNE • EAGLE
EPSON • OKIDATA • DIABLO...

Limited to stock on hand.

Full Service Dept. Call (415) 961-3811

WE STAND BEHIND EVERYTHING WE SELL!

90 DAY parts & labor warranty

2384 El Camino Real
Mtn. View, CA 94040
(415) 968-6811
Modem Access:
(415) 961-1431

icb INTERSTATE COMPUTER BANK

USER GROUP NOTES By Mary Eisenhart

The call goes out this month from **Axel Olmos** of Oakland: "Did you just buy that **Atari 520ST** and find out that you were one of the first 100 or so in the Bay Area to buy one? Did you think it would be a long time before you ran into another 520ST user? Not sure how to use it? Don't know where to go for help?"

Well, if that's what's troubling you, friends, call Axel at (415) 658-3159. He's starting up **COAST (California-Oakland Atari ST's)**, and he's offering a free one-year membership to the first twenty ST users who call him. COAST will feature SIGs, newsletters, software, guest speakers, a Help Hotline, parties, swaps, etc. Also in the works is a bulletin board for ST users.

In addition to many other projects, **Lee Felsenstein** is in the process of bringing together a **Mac Hackers Conference,** which may be of interest not only to the more technically-oriented Macintosh users, but also to Amiga and Atari ST aficionados. As Felsenstein explains on **The WELL,** the conference's purpose is "to provide a forum for the free exchange of information regarding opening the architecture of the class of computers known as Macs." He continues, "This includes the Atari ST Jackintosh and all others wherein control information is expressed by means of positional relationships on the screen between visual elements.

"Macs are good. We like Macs. We think they deserve the best support any computer can have — an open architecture and lots of happy hackers ... In America, people hack things. Two guys named Wright hacked the first plane. If The Company won't do it, we'll do it for them, and have fun doing it. Like other things, it's better if you don't do it alone."

Rallied by this clarion call, a distinguished assembly including several out-of-towners in SF for SIGGRAPH gathered at the Exploratorium on July 26. General introductions were made and possible plans discussed, amid occasionally heated debate on various issues (e.g. profit vs. nonprofit, operating system compatibility, to Unix or not to Unix). The planned result of this ongoing collaboration, an open-architecture, powerful, public-domain "Hackintosh" with the ability to support a wide range of customized applications, will grow out of what seems to be some pretty diverse input.

If you'd like some of that input to be yours, or if you feel you have some contribution to make to the cause, you have several options. If you're a Bay Area resident on The WELL, check out the Hacker's Conference for the latest developments and add your own questions and comments. (If you'd like to be on The WELL, call (415) 332-4335 for information.) Alternatively, you can attend the next meeting of the **Homebrew Computer Club,** which is being held at 8 pm, August 21 at Turing Auditorium, Jordan Quad on the Stanford campus. (Felsenstein enjoins those who attend not to disturb the class in progress in the auditorium before 8.) If neither option is a possibility for you, send a SASE to Lee Felsenstein at Golemics, Inc., 2600 Tenth St., Berkeley, CA 94710 for a copy of the bulletin and to be added to the mailing list.

More on this next month, and as things happen.

Linda Kahn of the **FORTH Interest Group** calls with a correction for those who were planning to attend FIG's annual convention and banquet in September. The event will still take place at Rickey's Hyatt in Palo Alto, but on September 20 – 21, not 21 – 22 as previously reported. So revise your calendar accordingly.

Leslie Lieurance of the **Screaming Eagles User Group** of San Francisco reports that the group is instituting a distribution of a public domain disk to new members. Consequently, dues are changing: fees are now $10/yr. for individual members, $20/yr. for businesses. The Screaming Eagles are a group for 8-bit CP/M Eagle machine users, and more information is available from Leslie at (415) 661-4362.

If you're an **IBM PC** or compatible user in the general neighborhood of UCLA, **Anne Sylvester** of Santa Monica reports that there's a group just for you. The **UCLA PC Users Group** meets on 2nd Tuesdays at the NPI Auditorium, Westwood Plaza, Level C on the UCLA Campus. Meetings are at 7 pm, and the group offers a public domain library, SIGs, and a newsletter. For more information, contact Anne at (213) 451-5390.

Chris Schram of the **TI-COMM BBS** in San Jose says, for those of you that have been trying in vain to get through, that the board is currently in the process of having its location, phone number and sysop changed, and that consequently the board will be down for at least a month. So stay tuned for the updated, new, spiffy TI-COMM BBS, which will be back with us as soon as all the changes are made.

Nancy J. Hildebrand of **PATCA** (Professional & Technical Consultants Association) sends along some materials from her organization. PATCA is a nonprofit organization comprised of a diverse assortment of consultants, both the self-employed and those employed by small firms. It periodically conducts seminars and meetings to keep members informed of industry developments. For those seeking the services of a consultant, PATCA publishes a directory of consultants (indexed both alphabetically and by specialty) and offers a no-fee referral service. If you're a consultant looking for others of your profession to pool resources with, or if you're suddenly finding that you need a consultant, call PATCA at (408) 287-8703.

On the subject of professional organizations, software developers might want to check out the **Software Entrepreneurs Forum,** a Silicon Valley organization which seeks, according to founder Mike Boss, "to create a contemporary agora for the software industry, a stimulating environment which recognizes the need for the promotion of innovative concepts in the midst of, not apart from, the hustle and bustle of the marketplace." SEF has numerous SIGs on topics from Marketing to Macintosh, along with frequent general meetings, speakers and useful presentations. The SEF is a nonprofit organization which has grown since 1983 from about a dozen members to over 200, with a wide range of interests and specialties. Information on SEF is available by writing P.O. Box 61031, Palo Alto, CA 94306, or call (415) 854-7219.

Neil Zachary of the **IBM Users' Group** reports that his organization is now not just national, it's international. In conjunction with ITT/Dialcon Inc., the group is inaugurating a worldwide network link, featuring a bulletin board, SIGs, a catalog of the group's public domain library, and a forum for manufacturers, publishers, and other purveyors of computer-related merchandise to connect with interested user groups. The network link is also intended to facilitate the organization of local chapters of the group. Dues for the IBM Users' Group are $25 per year for individuals; corporate rates are available.

To get the electronic network to a good start, the group and ITT/Dialcon will be giving a demonstration of the system on August 21 at the Sheraton Town House, 2961 Wilshire Blvd., Los Angeles. Neil invites all interested users of IBM and compatible equipment to come and learn how to use the system (the session will be videotaped as a learning aid to user groups who miss the meeting and decide later that they'd like to be on the network). Individuals interested in attending the session should call (800) 435-7347 for more information. Those interested in joining or affiliating their group with the IBM Users' Group can write to 4111 Lincoln Blvd., Suite 100, Marina Del Rey, CA 90292.

The **East Bay FOG** will be having a booth at the **West Coast Personal Computer Faire,** September 5 – 7 at Brooks Hall in San Francisco. The FOGers need some volunteers to help in their booth, so if you're an **Osborne** user with some spare time call Irv Kavanaugh at (415) 522-9118. East Bay FOG is also planning a swap meet for its September meeting.

MicroTimes will also have a booth, both at Intech and the PC Faire. So if you're in town for the show, be sure to drop by and say hello. And even if you're not, keep your cards and letters coming in. And note our new Calendar of Events — if you're having an event you'd like on it, send us a notice (preferably about six weeks early, to avoid having your September 15 event listed in the October 12 issue) and we'll do our best to get it in there. Here's your chance to publicize your group's Kludge Of The Year Contest, the Exhibit of Useless But Neat Software, the Flight Simulator Marathon, and other exotica. Send useful and/or informative communiques to MicroTimes User Group Network, 5951 Canning St., Oakland, CA 94609. □

August 17	Computer Swap, San Mateo County Fairgrounds, Fiesta Exhibit Hall, 2495 S. Delaware, San Mateo. (408) 266-6768, (408) 978-SWAP for info.
August 26 – 29	INTECH (Integrated Information Technology Conference and Expo), Moscone Center, San Francisco. (800) 638-8510.
September 5	Information session for UC Extension Computer classes, 55 Laguna St., SF, 5:30 – 7:30 pm. (415) 642-3112.
September 5 – 7	Personal Computer Faire, Brooks Hall/Civic Auditorium, SF. (617) 965-8350.
September 9 – 10	Seminar, "How To Write User Documentation," SF State U., Center for Professional Development. Call (415) 469-2509 for information.
September 11 – 12	(Silicon Valley); September 14 – 15 (San Francisco) Self-awareness/relaxation workshop with computer consultant/meditation instructor Ben Spector. Free. San Jose (408) 996-8036. San Francisco session at A.P. Giannini Auditorium, Bank of America Center, 555 California St., SF. (415) 661-9152, preregistration required.
September 28 – 29	Golden Gate Computer Expo, Oakland Coliseum, 10 am – 5 pm. (415) 459-1998.
October 5	Computer Swap, LA County Fairgrounds, Pomona. (408) 266-6768, (408) 978-SWAP for info.

SUMMER SPECIALS

*D*ynamic *R*ams

256K NEC 150ns . . . . . .SET OF 9 **$29.95**
64K NEC . . . . . SET OF 9 **$8.95**

1 year Guarantee

Locking Disk File 50 Disk Capacity **$10.95**

*F*loppy *D*iskettes

ECHO high quality media Used by OEMs
5 Year Warranty DS/DD 48tpi

Boxed 10 discs **$12.95**
Bulk 20 discs **$19.95**

*H*ard *D*isks for **IBM PC, PC- XT**

1 YR Parts & Labor Warranty

10 MBYTE TEAC Drive
1/2 ht. w/controller **$499.95**
20 MBYTE TULIN Drive
1/2 ht. w/controller **$599.95**
20 MBYTE Drive for PC PORTABLE. **$699.95**

Service on IBM, APPLE, COMPAQ Computers and EPSON Printers
SAM Service Documentation for IBM & APPLE Products

ABLE Computer Service

master charge THE INTERBANK CARD

Mon-Fri 8-5

408-496-6884
1900 Lafayette Street, Suite 104
Santa Clara, CA 95050

VISA

Sat 8-12

NEW

Finally! Copy Your AT Files To Your PC's

IBM AT **IBM PC**

ONLY **$79**
CPYAT2PC includes utility software program and users manual

Software Program Features

- Allows copying of IBM AT files for use on IBM PC's & compatibles
- No modification of existing hardware or software is needed -360K floppy drive is not required!
- Copies 1 file or entire sub directories in 1 step
- CPYAT2PC may reside on your IBM PC/AT hard disk "route" directory for ease of use
- UPS shipping available

MICROBRIDGE
Computers International, Inc.
425 Harbor Blvd., Suite 2F, Belmont, CA 94002
(415) 593-8777

AT is a trademark of IBM.
CPYAT2PC is a trademark of Microbridge Computer Inc.

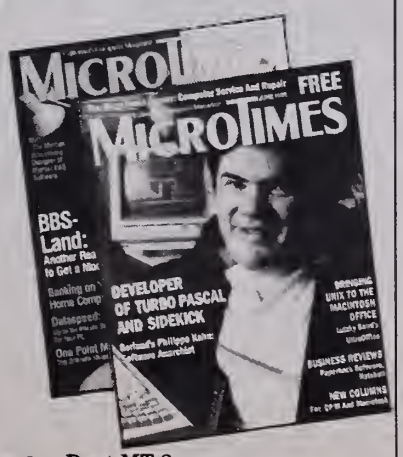
You've got the "Home-Field Advantage"

When you subscribe To MicroTimes

And you'll be the winner in more ways than one! You'll get new product updates, software and hardware reviews, industry news and information, user group info, and so much more.

In MicroTimes, you'll be able to find all the products and services you need to keep computing from local computer stores and businesses.

The "Home-Field Advantage." It's yours when you subscribe to MicroTimes!



50% OFF
ONLY $9.95

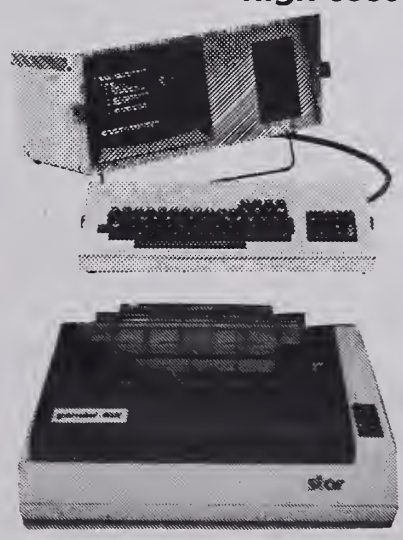
1 Year Subscription
12 Issues!

Send inquiries to:

MICROTIMES Dept MT 8.
5951 Canning Street,
Oakland, CA 94609

Check the Bottom Line.

It comes down to this: the Kaypro 1 keeps the high cost of computers in check.



- The Kaypro 1 has two disk drives; a typewriter-style keyboard; a large, non-glare screen; parallel and serial ports; word processing software and the operating system at no extra cost!
- Check it out!

includes **STAR PRINTER** AND **WORDSTAR SOFTWARE**

$995

- WE GIVE COMPLETE SERVICE AT THE **BEST** PRICES
- LARGEST KAYPRO DEALER IN THE BAY AREA
- WE WILL **MEET** OR **BEAT** ANY ADVERTISED PRICE ON KAYPRO (current products only)

KAYPRO 286i $2995
IBM AT COMPATIBLE
512K Ram, Hard Disk Controller, Can be configured to your needs

KAYPRO 2000 Accessories **NOW AVAILABLE**

COMPUTER INSIGHTS
Specialists in Computer Applications to Business

WE ARE THE BAY AREA'S LARGEST KAYPRO DEALER

40957 Grimmer Rd.
Fremont, CA 94538
(across from Tri-City Sports)
415/490-0685

416 Town and Country Village
San Jose, CA 95128
408/244-4080.

USER GROUP NETWORK

BULLETIN BOARDS

NORTHERN CALIF.

Kay*Fog RBBS. A system designed for novice callers. No fees, but registration required. PO Box 11135, San Francisco, CA 94101. Sysop: Bond Shands. (415) 285-2687. 300/1200/2400 baud.

Napa Valley RBBS/RCP/M (707) 257-6502. Interests in Atari, Apple, Osborne, dBase II.

Bay Area Atari Users Group 24 hour BBS (408) 578-2390.

NCR BBS of Northern California Bulletin Board System for all users of NCR Microcomputers (Decision Mate V and PC-4). Learn more about NCR's microcomputers.

TI-Comm BBS 8:30 pm to 8:00 am, 7 days a week. 300 baud. Multiple message bases, features, and ELIZA. (408) 926-4413.

The Bay PBBS 300/1200 Baud full duplex. 24 hrs., 20 megs online. Apple super-32 computer section, excellent Macintosh/Apple II downloads. (415) 775-2384. Easiest to get through in the mornings.

TI BBS 300 baud, 24 hours. All systems welcome. Free. 4 message bases, large data base on various subjects. (415) 994-4877.

BAKUP (Bay Area Kaypro Users and Programmers) (415) 223-2237 RBBS & RCP/M — Must be a member of BAKUP, P.O. Box 20181, Oakland, CA 94620.

NCR BBS of Northern California (408) 744-0556. Bulletin board for all users of NCR microcomputers (PC-4 and Decision Mate V). Learn more about NCR's microcomputers. Contact Lee Sherman or Jim Chandler, 756 San Aleso Ave., Sunnyvale, CA. (408) 743-4933.

SIMMS (Silicon Valley Interchange) 4000 files on line. New releases, communications, and utilities for CP/M based computers are available on a nonprofit public-domain, 24 hour remote CP/M system. The SIMMS (Silicon Multiple Message System) Network Headquarters runs on a CompuPro 818 with 40 megabyte hard-disk drive. The Modem number is (408) 732-9190. To register, send a six-digit password and $25 to SIMMS Headquarters, Silicon Valley Interchange RCP/M Registration, Box 532, Cupertino, CA 95015. Sysop: Ed Svoboda Jr.

Bulletin Board Hewlett-Packard BBS. Features HP-current events and user information. 24 hrs., 300-1200 baud, 7 bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

MBL Referral System BBS A board dedicated to personal messages and advertising listings. Modem: (415) 444-6362; 8 pm - 6 am weekdays, 24 hours weekends. MBLRS BBS users meeting Saturdays, 5:30 pm, 1555 Lakeside Drive, Suite 23, Oakland. Call (415) 444-3033 for info, ask for Mel.

Entertainment Network. Features Top 10 Music charts, Top 5 books, videos, movies, computer software, video and movie reviews. Software dept. (10-80% off on Apple, Atari, Commodore & IBM), E-mail, upload, download, multiple message boards, new releases and much more. Sysop: Raaj Menon. (415) 471-3591.

Vortex BBS. (918) 481-0194. 24 hours, 300 baud. Pamela Lunsford, sysop.

BULLETIN BOARDS

NORTHERN CALIF.

Welch Net II. A public FIDO BBS. Message areas devoted to Turbo Pascal programming and Seequa Chameleon computers. Available 23 hours/day. (415) 391-9148.

The General Store Public Domain Programs. Computer industry and computer product information. Hundreds of diverse public domain programs including science, music, education, games, financial, and business programs for the Apple computer. Easy to use. 300 baud, 9 am - 12 pm, (415) 851-4497.

Fantasy Factory BBS. Fantasy Factory of Pacifica. IBM and compatibles oriented, but all welcome. 300/1200 baud, 8 bit, no parity, no fees. (415) 355-6047. Sysop Ev Cheney.

Pro Bono BBS (TM) is a public interest board with file areas devoted to legal self-help and education, landlord/tenant relations, financial and tax issues. Modem line is (408) 372-8737. Events and meeting information for several Monterey Bay user group events are posted on the message board.

ROOTS—BBS. Available 24 hours, 7 days a week, supports 300/1200 baud at 8/N/1. Specializes in genealogical info with messages, upload and download of CP/M, DOS, Apple software. Sysop: Brian Mavrogeorge. (415) 584-0697.

The Agency BBS. 300 baud. Free. All systems welcome. 16 message bases large data base of over 100 files on various subjects. Special areas for special interests such as gaming, business programs, and MIDI (Musical Instrument Digital Interface). 24 hours. (818) 794-5001.

SOUTHERN CALIF.

Gamenet Bulletin Board System. BBS is devoted 100% to gaming subjects. 24 hours, 20 boards, 10 D&D/RPG boards, Alkahest, professional book reviews. Unending Story, Adventurers' Training Ground, Game Hint, etc. Sysop: L.J. Phone: (213) 541-8039.

The Consultant's Exchange BBS Serving professional computer consultants and students since 1983 with the finest public domain software for the IBM-PC. Featuring consultants list and job list. (714) 842-6348 24 hours.

Thousand Oaks Technical (805) 493-1495. This massive 64 megabyte board has a mind-boggling number of downloadable programs. The board has no bulletin board feature and allows unlimited upload time. Download time is limited depending on upload exchange.

Granada Engineering Group RCP/M (818) 360-5053. Technical information, BBS lists, and help on CP/M assembly language program writing.

Aware II (213) 851-0780. Sports BBS with different discussion boards centered around USFL, baseball, etc..

Junkyard Data (213) 867-9541. Multi-interest board in Norwalk with everything from jokes and for sale items to reviews (movies & software), trivia questions, an adults only section, etc.

Marine Matchup (213) 397-6300. This Mar Vista-based dating board operates with Martian software.

BULLETIN BOARDS

SOUTHERN CALIF.

Lynzie's Motherboard North Hollywood; multi-interest board with public boards, entertainers exchange, job exchange info. Runs on IBM-PC with 10 mb storage, operates on Martian Software, runs 24 hours a day. (818) 506-6482.

Bulletin Board System. BBS devoted to handicappers and racing fans in So. Cal. On line every weekend. Log-on: race data for Santa Anita, Hollywood Park and Del Mar. (213) 934-6026.

Videodrome BBS. Where computers and video meet. (213) 324-5882. Open weekdays 4 pm - 2 am, weekends 12 pm - 2 am. A Commodore 64 system.

HUG1. The official BBS of the Hollywood Commodore User Group (HUG). All HUG members and visitors are welcome to drop by. (213) 874-8256.

ASSOCIATIONS

Software Entrepreneurs' Forum, PO Box 61031, Palo Alto, CA 94306. (415) 854-7219.

PATCA (Professional & Technical Consultants Association). 1330 S. Bascom Ave., Suite D, San Jose, CA 95128. (408) 287-8703.

ITRA Independent Technical Representative Association is an organization dedicated to helping people better understand the Personal Computer (IBM). Contact Tim Jones, 870 Market St. #609, San Francisco, CA 94102, (415) 421-4672 for meeting time and date.

MCTUG (formerly Marin County TRS-80 Users' Group). MS-DOS, CP/M and Tandy users group. Meets 7:30 pm on the first Monday of the month at the Larkspur Masonic Lodge, 1122 Magnolia Ave., Larkspur. Contact Dr. Frank Hovell, 907 Sprucewood Court, Petaluma, CA 94952, (707) 762-5740.

PRACSA (Public Remote Access Computer Standards Association) offers to clubs, schools, and user groups a Speakers Bureau. The purpose of the bureau is to act as a resource to these groups in obtaining speakers of high quality for their meetings. The volunteer speaker is provided free to the group. Contact (408) 262-5150. Meetings 4th Wednesday, 7 pm, Vadic Cafeteria, 222 Caspian Dr., Sunnyvale.

San Bruno Computer Club. Meetings Wednesday 7:30 pm. Call Pete Testart, (415) 952-9309 for information.

San Francisco Computer Society (Formerly the San Francisco First Osborne Group). A society for users of portable computers and/or the CP/M operating system. P.O. Box 783, San Francisco, CA 94101-0783. Meetings on fourth Thursday of the month, St. Aidan's Church, Diamond Heights and Goldmine Dr. in SF. All are invited. Dues $10/yr.

NATIONAL/ INTERNATIONAL

Network Users Association. 2111 Eisenhower Ave., Suite 400, Alexandria, VA 22314. (800) 638-8510 or (703) 683-8500.

TPUG
World's largest Commodore Users Group. $25 annual membership entitles you to access to library of public domain software for C-64, VIC 20, PET, CBM, SuperPET, B-128. Coming soon — Plus 4, C-16, C-128. New disks added each month. Also TPUG Magazine (10 per year), free access to TPUG's Bulletin Board Modem System, 24 hours, 7 days. TPUG Inc., 1912A Avenue Rd., Suite 1, Toronto, Canada M5M4A1.

Apple Co-op 290 SW 43rd, Renton, WA 98055. (201) 251-5222.

JUG (Jefferson State Computer Users Group). Many SIGs, newsletter. Dues $5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

MicroPro Users Group of America. National group with over 200 members worldwide. Dedicated to supporting MicroPro products, especially WordStar and InfoStar, for any hardware. c/o Procyon Associates, 140 Riverside Drive, New York, NY 10024. (212) 595-4811.

Franklin Users Group International. Supporting users of II, II+, Franklins, and all compatibles. We support all members with a monthly newsletter, "The Clone Ace," a growing public domain library and personal attention. Membership $15.00 a year. Contact Douglas M. Trueman, EastWind Apt. L77, Tecumseh, MO 65760.

USER GROUPS

ACTRIX

ACTRIX Computer Enthusiast Society. Membership ($20/yr) provides public domain software, group rates, discounts for owners of Actrix/Access Matrix microcomputers. Meetings at Sunnyvale Community Center, last Wednesday of the month, 7 pm. Contact K. Edward Lynch, 1405 Phelps Ave. #29, San Jose 95117, (408) 756-5104, for more information.

ADAM

California's Adam Users' Group. For a sample issue of the newsletter and a hardware-software catalog free, send your address to CAUG, 1643 Beach St., San Francisco, CA 94123.

APPLE

Diablo Valley Apple Users. Meets 3rd Friday of each month at EMS, 2371 Stanwell Dr., Concord, at 7 pm. Contact Lynn Hart, P.O. Box 5031, Concord, CA 94524, (415) 798-9281.

South Peninsula Apple Computer Enthusiasts (c/o David Harris, P.O. Box 1257, Palo Alto, CA 94302) meets near the Varian Credit Union, Bldg. 4C, 611 Hansen Way, Palo Alto, at 7:30 pm on the first Tuesday of every month to exchange information about available hardware, software, events, publications, and methods on Apples, and to encourage collaboration on projects. Call (415) 856-9126 — answering machine takes 30-second messages.

APPLE

San Francisco Apple Core Meets every third Saturday of the month at Fort Mason, Bldg. C, Room 100 at 10 am. New products and innovations are featured for Apple II, Apple III, Macintosh and Lisa. Public domain library, SIGs, tech help, newsletter. $20 per year membership. Info: SF Apple Core, 1515 Sloat Blvd., Suite 2, San Francisco, CA 94132. (415) 566-2342 (voice), (415) 474-8606 (BBS/modem).

SPCA (Society For The Prevention of Cruelty To Apples) The Society for the Prevention of Cruelty to Apples is a club for owners of Apple, Apple-compatible (Franklin, etc.) and Macintosh personal computers. It meets at 7:30 pm on the last Wednesday of the month at Thornton Jr. High School, on Thornton Ave. at Dusterberry, in Fremont. Contact SPCA Publicity Chairman Milton Buck, 5246 Channel Drive, Newark, or call (415) 794-2822 for more info.

Association of Apple 32 Users Macintosh, Lisa. An association of "knowledge workers" who wish to share information on products, applications, and events. User-developed, non-copyrighted software, SIGS, newsletter. P.O. Box 634, Santa Clara, CA 95052.

Apple Eaters Users Group. Apple II users group meets monthly (first Thursday) at Hayward Software Centre. Operates, with San Leandro H.S., a 24 hr. free BBS at (415) 577-3409. Meetings 22406 Foothill Blvd., Hayward. Contact Bob Shayler, 2200 Bancroft Ave., San Leandro, CA 94577, for more information.

Pen Apple. Pen Apple Users Group meets 2nd Thursday of each month at AMPEX cafeteria, 7:30 pm, Redwood City. Draco Bulletin Board. Contact Karl Shores (415) 366-0339.

ASHTON-TATE

Framework/Editor Bay Area Users Group (FREDBUG) Purpose of the group is to share programming and applications techniques under FRAMEWORK for the business and technical professional. Call for info: Rudi Wiedemann, (408) 730-4159.

San Francisco dBase User Group For advanced users and programmers. Meets once per month. Membership required for attendance. Contact Frank A. De Coster, 1100 Gough St., San Francisco, CA 94109, (415) 474-6893.

dBase Users Group. Meets 2nd Thursday each month at Software Center, 1975 Diamond Blvd. #C220, Concord (Willows Shopping Center), 7:30-9 pm. Contact Cyndy Kolnick (415) 235-7317 for information.

ATARI

C.O.A.S.T. (California Oakland Atari S.T.) Bay Area's first ST only user group. Fun, information, and more. Call for more info: Axel Olmos, P.O. Box 20481, Piedmont Station, Oakland, 94620, (415) 658-3159.

Bay Area Atari Users Group We have a 24-hour BBS at (408) 578-2390. Meetings at Dysan Auditorium, 4201 Patrick Henry Drive, Santa Clara, CA 95050, first Monday of the month. Contact Frank Negle, P.O. Box 50459, Palo Alto, CA 94303, (415) 940-1323 for more info.

ATARI

ABACUS (Atari Bay Area Computer Users Society) All ATARI users or prospective users are welcome. Membership ($15/year) provides public domain software, low cost blank disks, monthly newsletter, group prices on hardware and software, help from experts, low cost classes for beginners. Meetings first Saturday of the month, Fort Mason, SF, Room 300, Bldg. C, 10 am-2 pm. Contact Bill Zinn, P.O. Box 1823, Mill Valley, CA 94941. (415) 753-8483.

A.C.M.E. (Atari Computer — Marin Enthusiasts) Meets monthly in Marin, third Thursday evening monthly from 7 pm on. Gallinas School, 177 N. San Pedro Rd., San Rafael. Contact Bruce Frank, (415) 435-6020, P.O. Box 222, Tiburon, CA 94920.

Diablo Valley Atari Computer Enthusiasts (D.A.C.E.) Contact Richard C. Foster, Secretary, 3760 Lindero Drive, Concord, CA 94519.

San Leandro Computer Club Although open to all computer users, this group is primarily oriented to Atari computer owners. Our club is considered one of the best in the country, worthy of consideration by both novices and experts. Meetings 1st Tuesday of the month at San Leandro Community Library, 300 Estudillo Ave., San Leandro, CA. Contact Phil Mitchell, P.O. Box 1525, San Leandro, CA 94577-0152 for more info, or call (415) 351-2208.

ATTACHE

Attache UNL Otrona may be dead, but the Attache Users News Letter Lives ONII Contact Jim Ayers, 301 Poplar St., Mill Valley, CA 94941. (415) 388-4805. Meetings 7:30 pm, 2nd Wednesday.

BASIS

Bay BUG Basis 108 Users meet every first Friday of the month at College of Alameda Computer Room, 7:30 pm. Contact Roger Bernhardt, 536 Mission, San Francisco or call (415) 221-0262 for more information.

CASIO

Casio Research Project. Discussion and collaboration; creation of plug-in expansion board using VLSI chip. Share programs. Meetings TBA. Contact Julius M. Zebrowski, (415) 969-9458.

COMMODORE

San Francisco Commodore Users Group Public domain library, classes, tech help, in depth demonstrations, monthly newsletters, Epromer, savings on purchases, all this and more. BBS # (415) 567-5046 300 baud. Meeting address 256 Laguna Honda Blvd., San Francisco, 3rd Tuesday of the month, 7:30 pm. Contact Roger Tierce, 278 27th Ave. # 102, SF, CA 94121, (415) 387-0225.

20/64 Computer Users Group — San Jose Meets first Sunday of the month at the Theatre Building, San Jose City College, from 8 to 9 pm. (Donations requested to help defray cost of renting meeting space.) Call Herb Miller, (408) 253-2064 for more info, or write P.O. Box 18473, San Jose 95156.

512K Macintosh Memory Upgrade $225.

128K 1 & 2 Meg Upgrades Available

- We pick up and deliver
- 20 minute service
- 9 Month Warranty
- Free Software

MAC-UPGRADES
[415] 548-9811

MICRO TECH INTERNATIONAL'S SPECIAL OF THE MONTH

IBM PC MONOCHROME GRAPHICS SYSTEM

ONLY $1949

- **IBM PC** 256K WITH 2 TEAC ½ HEIGHT DISK DRIVES
- MONOCHROME GRAPHICS DISPLAY AND PRINTER ADAPTER
- PGS HI/RES MAX-12 OR AMDEK 310-A MONITOR

IBM PC COLOR GRAPHICS SYSTEM

ONLY $2179

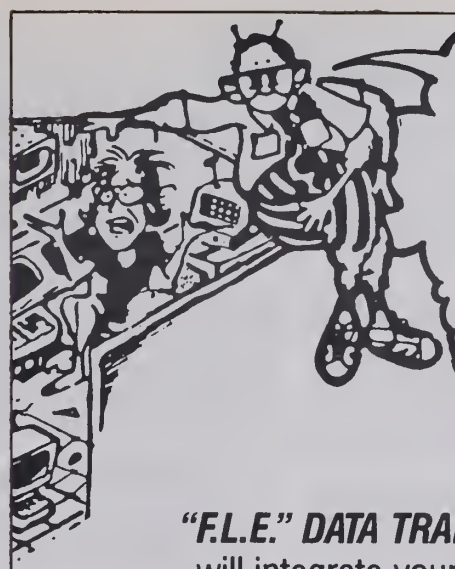
- **IBM PC** 256K WITH 2 TEAC ½ HEIGHT DISK DRIVES
- **HERCULES** COLOR GRAPHICS DISPLAY AND PRINTER ADAPTER
- **AMDEK** COLOR II GRAPHICS HI/RES MONITOR

* **PLUS** 3 HRS SYSTEM FAMILIARIZATION AND INTRODUCTION TO WORD-PROCESSING WITH PURCHASE OF ANY SYSTEM.
* **PANASONIC** 1091 PRINTER **$279.00** WITH PURCHASE OF ANY SYSTEM.
* CALL US FOR BEST PRICES ON **EPSON, CITIZEN, PANASONIC, DIABLO** AND **AMDEK** MONITORS AND PRINTERS.
* **EXTENDED WARRANTY** AND **FINANCING** AVAILABLE AT SPECIAL RATES.
* CALL US FOR SALES, INSTALLATION, SERVICE AND TECHNICAL SUPPORT FOR **CAD/CAE** AND **ACCOUNTING** SYSTEMS.
* IBM **AT** AND **XT** IN STOCK.
* WE ALSO CARRY A COMPLETE LINE OF **SOFTWARE** AND **HARDWARE** FOR IBM.

WORD PERFECT VERSION 4.0	PROMODEM 1200B W/SOFTWARE	MULTIFUNCION CARD WITH 64K
$ 249.00	**$ 299.00**	**$ 159.00**

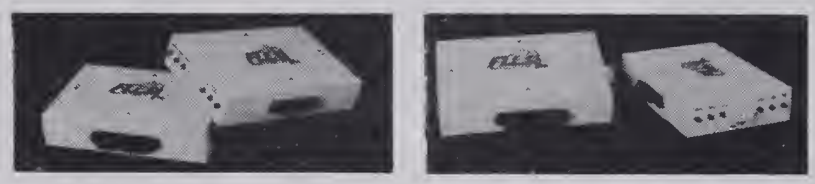
* ALL PRICES REFLECT A 3% CASH DISCOUNT
* STORE HRS.: M-S 10:00 AM – 7:00 PM
SUN 12:00 PM – 5:00 PM

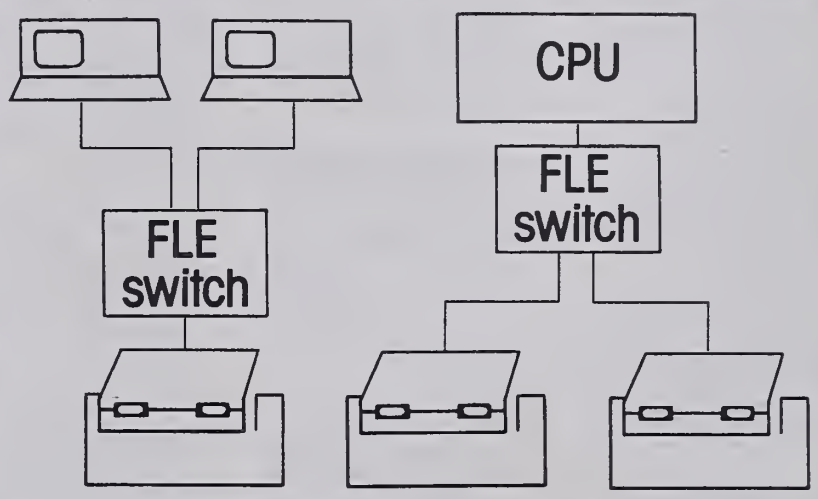
2375 SHATTUCK AVENUE
BERKELEY, CA 94704
(415) 548-9178



TIRED OF TANGLED CABLES, BROKEN CONNECTORS, BENT PINS, PLUGGING & UNPLUGGING HARDWARE? -OR Buying expensive Interface Boards?

"F.L.E." DATA TRANSFER SWITCHES
will integrate your computer(s) and peripherals into a versatile, cost-effective System.





MOST ECONOMICAL

AND

RELIABLE

For as little as **$44.95** *Expand* a single RS-232 port on your computer to several peripherals
-OR-
Share several computers with one Economical printer!

DB9
DB25 (RS-232)
Centronics Type Parallel

Configurations:
DB-9 (Parallel)
DB-25 (Parallel)
Centronics (Parallel)
Serial: L.E.D.'s
IBM Compatible
Cross-Over Applications
Multi-ports

Five (5) Year Warranty
All Critical Lines Switched
Digitized Printed Circuit Boards

5′ Shielded Cables	**$10.00**
RS-232 Break-Out Box (II L.E.D.'s)	**$36.95**
Power Conditioners: 175 VA	**99.00**
325 VA	**139.00**
"Convenience Box	**46.95**

Includes:
1 to 3 "Y" - Patch
Gender - Mender
Serial L.E.D. Monitor

FUTURE LINE ELECTRONICS
CALL (415) 820-7611
(c.o.d.'s, check, visa, MC)
DEALER INQUIRIES WELCOME

(415) 829-1303
3211 Crow Canyon Place
Suite A
San Ramon, CA 94583

USER GROUP NETWORK

COMMODORE

20/64 Computer Users Group — San Jose North Valley Meets second Saturday of the month at the second floor Community Room of Montgomery Ward's, Capitol and McKee Roads, San Jose, from 10 am to noon. (408) 253-2064.

20/64 Club The Cupertino chapter of the 20/64 club for Commodore users meets the second Sunday of each month, Cupertino Public Library, 6 pm. Contact Rex Ackerman, P.O. Box 61063, Sunnyvale, CA 94086. Phone (408) 245-7270.

20/64 Computer Users Group — Gilroy Meets the second Wednesday of the month at the Gilroy Public Library, 7397 Rosana Street, Gilroy, from 7 to 9 pm. (408) 253-2064.

Marin Commodore Club Meets at Redwood High School, Corte Madera. Visitors welcome. Contact Elmer Johnson for information: 665 Las Colindas, San Rafael, (415) 479-0426.

Diablo Valley Commodore Users Group Meetings Contra Costa Water District Auditorium, 1331 Concord Ave., Concord, CA, second Thursday of month at 7:30 pm. Write DVCUG, P.O. Box 27155, Concord, CA 94527, or call (415) 838-2838 for more info.

20/64 Computer Users Group — Campbell Meets the fourth Tuesday of the month at the Campbell Public Library, 70 North Central Avenue, Campbell, from 6:30 to 9:30 pm. (408) 253-2064.

Napa Valley Commodore Computer Club Meets first and third Mondays, 7:30 pm, at Northwood Elementary School, 2214 Berk St., Napa. Take Redwood Road to Dover St. to Berk St. Contact President Dick Bull (707) 257-3773 or vice-president Roger Pruym (707) 253-1690 for more info.

Lake County Commodore Users Group Contact Al Reuss, P.O. Box 388, Clearlake, CA 95422.

PUG of the Silicon Valley Commodore 64 (PETs, 8032s, 2001s also). Friendly computer group established back in 1977 with a very extensive disk library. No dues, donations only. Bring your machines to the meeting or use club dual disk drive to copy programs. Meets at cafeteria, Ford Aerospace Bldg. #3, 3939 Fabian Way, Palo Alto, CA 94303, 1st Wednesdays of the month, 7-10 pm. Contact Marvin Vander Kooi, (408) 446-1936.

Peninsula Commodore User Group Public domain library, demonstrations, user help, newsletter. Membership is $25 per year. Non-members pay $2 at door. Meetings are 3rd Tuesday of each month. Meeting place is the Church of the Good Shepherd Hall, 1300 5th Ave., Belmont (across from city hall). For more info call (415) 595-5452 between 9 am and 6 pm, or call our BBS at the same number after 6 pm.

The Commodore Connection. Newsletter, BBS, public domain disks, dealer support and more. Approved member of Commodore World. Call (415) 458-3318 8 am - 8 pm or 8 pm - 8 am for the BBS. Meetings 1st and 3rd Mondays, Neighborhood Center, Civic Ave., Pittsburg, CA, 7:30 pm.

NBUG (North Bay Users Group). Contact Jim Stephens, president, 124 Delgado St., Vallejo, CA 94591, or write P.O. Box 7116, Vallejo, CA 94590.

COMPAQ

SF Compaq. A Compaq user's group is being forming in the SF Bay Area. Contact David J. Blow, 439 Hoffman Ave., SF, CA 94114, (415) 221-2768.

CROMEMCO

Silicon Valley Cromemco Users Meets 4th Tuesday of the month at MCM Enterprises. 215 Hamilton Avenue, Palo Alto, CA. Call Ken Brown at (415) 327-8080 for details.

EAGLE

Eagle Computer Users Group (ECUG) Forum for exchange of info and ideas relating to Eagle Computers. Meetings and classes in WP, Data Base, Modems, CP/M, MS/DOS, etc. Meetings at Mercury Savings and Loan, 859 Blossom Hill Road, San Jose, fourth Monday of the month, 7 - 9 pm. Contact David Meisman, P.O. Box 3381, Saratoga, CA 95070, (408) 973-1254/973-1460.

Screaming Eagles User Group for 8 bit CP/M machines. Quarterly newsletter, public domain disk. Meet on CompuServe (PCS 54). $10/year individual, $20/year business. 101 Parnassus #1, San Francisco, CA 94117. (Voice) (415) 661-4362.

ENABLE

ENABLE Users' Group. Supporting users of Enable, the integrated software system. Monthly meetings and newsletters. Registration and year's dues: $25.00. Loaner copy available for trial. Meetings at Fort Mason Center, SF. Time and date vary—write for sample newsletter, or call: Lion Goodman, 38 Glen Dr., Mill Valley, CA 94941, (415) 381-3300.

EPSON

Bay Area Epson Salts — Epson 125 Del Centro, Millbrae, CA 94030, (415) 697-0567.

Epson Users of San Francisco Bay Area Epson group has nationally circulated newsletter *Valnews*: 400 members — mostly QX-10 owners, growing software library. Meetings focus on mutual support. Mainly Valdocs and other applications. Meetings first Thursdays. 7 p.m. Fort Mason Center, Bldg. C, Room 205, San Francisco. Contact Alan Magary, 904 Irving St., Suite 271, San Francisco CA 94122, (415) 661-9270.

Napa Valley Epson Users Group 1307 Hestia Way, Napa, CA 94558, (707) 253-8727.

FORTH

FORTH Interest Group, Berkeley Chapter. Meets 2nd Saturday of the month at 1 pm, 10 Evans Hall, UC Berkeley. Contact Mike Perry, (415) 644-3421.

FORTH Interest Group, Monterey/Salinas Chapter. Contact Bud Devins, (408) 633-3253.

FORTH Interest Group, Sacramento Chapter. Meets 2nd Tuesday of the month, 7 pm, 1708 59th St., Room C. Contact Tom Ghormley (916) 444-7775.

FORTH Interest Group, Bay Area Chapter. Meets 4th Saturday of the month, 10 am advanced, 1 pm beginning, at ABC Christian School Auditorium, Dartmouth and San Carlos Ave., San Carlos (408) 277-0668.

FORTH Interest Group, Stockton chapter. Contact Doug Dillon (209) 931-2448.

GAVILAN

Gavilan Users Group. BBS (408) 978-DATA 300/1200. Meeting 2nd Thursday 7:30 pm, 10250 De Anza Blvd., Cupertino. info call Bob Brown (408) 379-2774.

HEATHKIT

San Jose Heathkit Users Group. Meets first Wednesday at 7 pm at the Heathkit store on South Bascom Ave. in Campbell.

IBM

San Francisco PC Users Group Largest SF group focusing on IBM and compatibles. Over 150 disks of public domain software, excellent monthly newsletter. 800+ members, $25/year. Please contact Gilbert Orlik, (415) 931-0377.

Sacramento IBM-PC Users Group. P.O. Box 685, Citrus Heights, CA 95610. Contact George W. Lefler (916) 988-2274.

South County PC Users Group Meetings held second Thursday of each month, at Software Center, 22408 Foothill Blvd., Hayward, CA. Public Domain club disks, newsletter and help on MS-DOS problems. Contact Debra Taylor, P.O. Box 7656, Fremont CA 94537-7656 for more info, or call (415) 276-5111.

SVCS (Silicon Valley Computer Society). IBM users group. Meets second Wednesday at 7 pm at the Westinghouse auditorium located on the corner of Duane and Britton Aves., in Sunnyvale.

California PC LAN Users Group, 1625 The Alameda, Suite 511, San Jose, CA 95126. (408) 289-1711.

KAYPRO

Santa Rosa KUG Owners of Kaypro computers or CP/M systems are invited to join the SRKUG. We conduct seminars and software instruction/training. Come join the fun. Meetings 3rd Thursdays of the month at 7 pm. Call for meeting address: James Daniels, 1029 Damon Court, Santa Rosa, CA 95401. (707) 575-8149.

BAKUP (Bay Area Kaypro Users and Programmers). One of largest Kaypro user groups in country. Meets 3rd Tuesday of month, 7:30 pm. We support our RBBS/RCPM for members, publish a monthly newsletter, have a 40 volume software library, and a lot of fellow KP'ers! Write for info, $10 per year to join: Membership Coordinator, P.O. Box 20181, Oakland, CA 94620.

KAYFUN Peninsula Kaypro Users Group meets second Thursday of every month at 7:30 pm in the ground floor social room, 222 Laurel St., San Carlos. Bimonthly newsletter, public domain software library, and publication library. Membership $12 per year. Every third meeting a Free Forum night dedicated to individual help. Contact Larry Welling, 222 Laurel St. #310, San Carlos, CA 94070, (415) 593-9981.

South Bay Kaypro Users Group (SBKUG). Meetings at 10400 Torre Ave., Cupertino. We have an extensive library of public domain software, including over 200 diskettes of the SIG/M library. The floor is open for questions at each meeting, and we welcome new members at all levels of ability. Bring your machine, or at least your diskettes. For meeting night call Chuck Hansen at (408) 257-5244, or write P.O. Box 390088, Mountain View, CA 94039-0088.

MACINTOSH

MacNexus. Sacramento's Macintosh User Group. 150 members, but still informal. Extensive public domain collection. Contact Gail McGovern, P.O. Box 60908, Sacramento, CA 95860, (916) 446-2411. Meetings 3rd Thursdays, 6:30 pm, Almond Plaza, 17th & C, Sacramento.

MacProgram Unlimited. Meets monthly. Informal with hands-on testing of different programs. Public domain and standard programs in rental library. Meets Albany YWCA, Kains and Solano, Saturday 9:30 am. Contact William Gong, P.O. Box 7704, Berkeley, CA 94707. (415) 527-1756.

Stanford Macintosh User Group. P.O. Box 6508, Stanford, CA 94305. (415) 854-2118.

Bay Area MacForum New and experienced Macintosh users. 2 monthly meetings: one immediately following San Francisco Apple Core meeting at Fort Mason, Building C, Room 300, San Francisco, 3rd Saturday of the month; one at Software Center, The Willows Shopping Center in Concord, second Monday of the month, 7 pm - 9 pm. For info: 1515 Sloat Blvd. # 2, San Francisco, CA 94132, (415) 566-2342

Berkeley Macintosh Users Group meets every Thursday evening at 5:30 pm on the UC Berkeley campus, in Physical Sciences Lecture Hall (near East Gate). Speakers, discussions, questions and answers. Developer SIG meets every other Wednesday at 5:30 pm on UCB campus in Dwinelle Hall lobby. For more info contact Reese Jones, Director, 1442A Walnut St., Suite #153, Berkeley, CA 94709 or call (415) 849-9114.

MORROW

BAMDUA (Bay Area Micro Decision Users Association). Meets on last Tuesday of the month, 7:30 pm. Call (415) 644-2805 for location. Monthly newsletter.

MINDSET

First Mindset Users Group Monthly meetings and newsletters cover advanced topics in computer graphics, animation, and video production using the Mindset Personal Computer and accessories. Meetings at various Bay Area locations, 3rd Monday of the month, 7 p.m. Contact Tim Negris, 138 Village Ct. #6, Walnut Creek, CA 94596, or call (415) 934-1448.

NORTHSTAR

INSUA Largest North Star users group in the world. Members' newsletter and software library. Membership dues $20. Contact George Riddle, P.O. Box 2910, Fairfield, CA 94533.

OSBORNE

East Bay FOG (First Osborne Group) Osborne, Kaypro and Morrow. Meets second Wednesday of the month at B&B Electric, 2832 Ford Street, Oakland. 6 pm workshops, 7:30 pm program. For info contact 5497 Taft Ave., Oakland, CA 94518; phone (415) 272-9099.

SMOG3 Osborne User Group (Peninsula) Meets first and second Monday of every month at Crane Place, 1331 Crane, Menlo Park. Call Phil Moore at (415) 325-2442.

MTDOG (Mt. Diablo Chapter—First Osborne Group) Meetings 7 pm, 3rd Wednesday each month in Diablo Room (top floor), SF Federal Savings and Loan, 1660 Olympic Blvd. (cross-street: California), Walnut Creek. Software library, software/hardware/service demonstrations, sharing problems and solutions. For meeting info contact Sylvia Tobias, (415) 376-4720.

OSBORNE

PICONET

Piconet CP/M Users Group. Meets second Thursday at 7 pm at the Stanford Linear Accelerator Auditorium, Palo Alto. The password at the gate is "Piconet Meeting."

PIED PIPER

Pied Piper Users Group Owners of Pied Piper CP/M based computer are invited to call or attend the PPUG. Meets last Tuesday of the month at 7:30 pm. Please call (415) 638-1146. Meeting address: 10950 Elvessa St., Oakland 94605.

RADIO SHACK/TRS

Byte Bandits of America TRS-80's workshop computers club — bimonthly meetings — 2nd Saturday and 4th Wednesday of the month. Bring your computers. Free membership. Modem (408) 374-3974. Meetings at 780 Many Ave., Campbell, CA. For info contact R.W. Brown, (408) 379-2774.

TRS-80 Computer Society of Diablo Valley The purpose of this group is the sharing of information, problem solving, support group, purchasing discounts, support for professional, business and educational users of Radio Shack computers. Out-of-area members welcome. Meetings second Tuesdays of the month, Willow Creek Center, 1026 Mohr Lane, Concord, 7:30-9:30 pm. Doors open at 7. Contact Roy or Sue Copeland, P.O. Box 23438, Pleasant Hill, CA 94523, (415) 372-7003.

TRS Nybblers. Since 1979. New MS-DOS SIG, 3rd Fri. ea. mo., Room 1500; CP/M SIG 1st Fri. ea. mo. BBS (415) 582-8442—24 hrs. DSDD disks, boxed, $14.00. Meetings at Chabot College, Hayward, 2nd Friday, 8 pm. Contact B.B. Jarvis, 1975 Paseo Del Cajon, Pleasanton, CA 94566. (415) 582-8442.

SANYO

Sanyo 1100/1200 User Group of the San Francisco Bay Area. P.O. Box 297, San Mateo, 8-10 pm, every 2nd Friday of month. Send large self-addressed stamped envelope for copy of newsletter.

Sanyo MBC 1100-1150 user group now forming in Oakland. Call or write (415) 534-1981, 5885 Bancroft Ave., Oakland 94605 for meeting time and location.

Sanyo User Group of the San Francisco Bay Area meets 2nd Friday of the month at Sears Savings Bank, 1820 S. Grant, San Mateo, 8 - 10 pm. Devoted to Sanyo 8-bit CP/M machines: MBC 1000, 1100, 1200 series. For info write 1260 Westwood St., Redwood City, CA 94061.

Sanyo National Users Group. SNUG is a central resource for Sanyo information and public domain. Inquiries welcome! Contact Ken Taylor, 4008 Pasadena Dr., San Mateo, CA 94403. (415) 345-7781.

Santa Clara Sanyo Users Group. SCSUG's 24 hour BBS (415) 659-9169. Support for MBC-55X Systems. Meetings at 1 West Campbell Ave. #80, Campbell, 7-10 pm every 3rd Wednesday of the month. Contact Jim Thomas, (415) 651-0201 for info.

TEXAS INSTRUMENTS

San Francisco 99ers One General Meeting per month plus uncountable mini-meetings for training. Over 500 programs available in library. Meetings second Tuesday of the month, 6:30 pm. Texas Instruments Learning Center, SF. Contact Dick Altman, 1053 Shrader St., San Francisco. (415) 661-1994.

South Bay T.I. User Group. One general meeting per month. We have training session, library and own bulletin board (408) 578-6264. Meets first Thursday of each month at 7:00 pm, 1368 N. 4th St., San Jose. Contact Fred Roettger, v.p., for info: (408) 253-3510.

Nor-Cal TI 99/4A Users Group. Learn more about your Texas Instruments 99/4A computer. Free software, sources ofr hardware and software. Contact Dave Strady, 324 Howard St., Petaluma 94952, (707) 762-6561. Meetings at Retail Clerks' Union Hall, 382 Tesconi Ct., Santa Rosa, CA, first Wednesday of the month at 7 pm.

TIMEX/SINCLAIR

East Bay Timex/Sinclair User Group (EBZUG) Timex/Sinclair user group. S/W library and newsletter. Meets at West Branch of Berkeley Public Library at corner of University and San Pablo. Meets 3rd Tuesday of the month at 7:30 pm. Contact Rick Link. 654 40th St., Richmond, CA 94805. (415) 234-3310.

Peninsula Timex/Sinclair User Group (PUG) Timex/Sinclair user group. S/W library and newsletter. Meets at Peninsula Hospital, 1783 El Camino, Burlingame. Meets 3rd Sunday of the month at 1 pm. Contact George Mockridge, 263 Gateway #107, Pacifica, CA 94044. (415) 359-3198.

UNIX

The Unix C-Club Seminars, public domain softwares, information exchange, Unix hardwares and softwares. Discount on purchases. Meets 2nd Saturday of each month at 10 am. Call Gilbert B. Dalit at (415) 348-6723 or (408) 238-5587 for more information, or write: 122 2nd Ave., Suite 214, San Mateo, CA 94401.

VECTOR

Bay Area Vector Group Meeting held regularly. Please call to be put on mailing list. You will be informed of next meeting! Contact Peter Tjeerdsma, 764 Cole St. #4, San Francisco, CA 94117. Phone (415) 681-0308.

VICTOR

Victor* Group is the San Francisco Bay Area Victor User's Group. We have three chapters — East Bay, South Bay, and San Francisco. Members can attend meetings at any of the chapters or all of them. The more the merrier. Dues are $30 a year, which includes a subscription to VictorTalk, membership in a Victor-exclusive discount buying cooperative, and the right to buy from our public domain library at a discount. South Bay meetings are held the first Thursday of each month at Computer Insights, 40957 Grimmer Blvd., Fremont at 7:30 pm. Contact John Kimber (415) 797-6423. East Bay meetings are held the second Wednesday of the month at 7:30 pm; contact Boardman Moore (415) 283-3285 for location and further info. San Francisco meetings are held the third Sunday of the month at 5 pm at Homestead Savings, 130 West Portal, San Francisco. Contact Joe Zmuda, (415) 584-4048.

NEW! MERGE/ PRINT

Complete Word Processing: ONLY $10

(Yes, We Said **TEN** Dollars!)

PC-Write™: Fast, Friendly, Flexible

PC-Write is a trademark of Quicksoft™ (For IBM PC, PC/XT, PC/AT, PC/jr, and true Compatibles) Wordstar and MailMerge are registered trademarks of MicroPro Int.

Professional Features
- Complete set of word processing features.
- Also excellent for editing program text.
- DOS **standard files** use any ASCII codes.
- MERGE/PRINT and. . . . ***FOOTNOTES!***
- Run DOS with editor and file in memory.
- Customize to foreign character sets.
- Supports 50+ printers, or can customize.

Easy to Learn
- Tutorial in manual gets you started.
- Nine screens of **Help** if you get stuck.
- Type anywhere on screen; **no boundaries.**
- Backup, save, un-delete keys avoid loss.
- Keyboard is easy to learn, easy to use
- Fonts like **bold** and ***underline*** on screen.
- Works on PCjr and single disk systems.

A Pleasure to use
- **Fast editing** avoids distracting waits.
- Fast startup, save text to disk, exit.
- **Customize** your keyboard anyway you like.
- Record and playback repetitive sequences.
- Customize your screen colors and fonts.
- Split screen can **edit two files** at once.
- Transpose, change case, bookmark keys.

NOW! MERGE-PRINTING!

The Best Just Got Better! PC-WRITE now can **Merge-Print** - like MailMerge®! The latest version has other new features. But the same low-low price. And **ProActive**'s exclusive program to convert **WordStar®** Files to standard ASCII (for **PC-Write** or other uses).

"**PC-Write** is packed with intelligent, useful Features. . . (it) may well be more versatile than WordStar — it's certainly more straight forward."

—PC World
Nov. 1984

***MAKE NO MISTAKE*: $10** buys NOT a "demo disk" or a watered-down version, but the complete program, in all its speed and power! No gimmicks, no catches. No kidding!

Order ***PC-Write*** NOW! Only $10.00*, from
ProActive Systems/MT
POB 20179
Oakland, Ca 94620
*plus $1.00 shipping; California residents, please add $.65

FREE
USER GROUP LISTINGS

MicroTimes is a new, free computer magazine with a current monthly distribution of 100,000 copies in Northern and Southern California. In addition to interviews, features and reviews, we offer a free listing service to user groups, bulletin boards and computer associations. Let us hear from you. Use this coupon for your listing, and feel free to include any additional information for our newsreels column. Please send us your listing by the third week of the month *preceding* the issue in which you want your first listing to run.

User group name _____

Contact name _____

Address _____

Phone number _____

Text of ad _____

_____

_____

_____

_____

Meeting address _____

Meeting time and date _____

Mail to: **MicroTimes User Group Listings**
1800 N. Highland #220
Hollywood, CA 90028
or
5951 Canning Street
Oakland, CA 94609

MICROCOMPUTER service NETWORK

Printer Service Specials

Trained and Factory "AUTHORIZED" Printer Specialists

EPSON	COMMODORE	DIABLO
ATARI	IBM	QUME
OKIDATA	SILVER REED	NEC
CITOH	TRANSTAR	BROTHER
APPLE	STAR MICRONICS	TELEVIDEO

Warranty Repairs Welcome
Custom Cabling Available

COUPON
FREE
Estimate
Expires 10/15/85

COUPON
SAVE $30
On Site
Service Call
Expires 10/15/85

For service, parts or other information call. **(415) 797-4724**

MICROCOMPUTER service NETWORK

3849 Peralta Blvd. Suite A Fremont Ca. 94536
License #23530 Closed Sundays

CLASSIFIEDS

PERSONAL

How to Break Into Computers, Basic programming, Pascal programming, Apple assembly, $9.95 each book, B&B Enterprises, 10993 Foothill Blvd., Suite 146, Hayward, CA 94541.

HARDWARE FOR SALE

IBM PC Monochrome monitor, new $150. IBM mono card $100. Call (415) 284-5203, evenings or a.m.

New Hewlett-Packard Quick, Quiet, Letter-quality Laser Printer $2500/best offer (415) 565-3639.

Diablo 620. Letter quality. New, in factory sealed box with warranty. $750. (408) 559-6459.

Apple II + System. Apple II + computer and disk drive. Many educational, home, and business programs included. Installation and initial tutoring available. $650. Call Scott (415) 851-3040.

Business Modem. Novation 212 Auto-cat, Direct Connect, exterior modem, variable 300, 1200 BPS, Apple interface RS-232 + cable $400. Dave (408) 446-3738.

Osborne 1DD—Wordstar, CPM, Grammatica, SpellGuard, Supercalc, Basic, dBase II, blank disks. Used 1 mo $600/BO (415) 228-8367.

Teac 54A disk drives SS/DD almost new. $65 ea. Call Chris (408) 274-0816.

HP 110 Portable $1500, Memomaker, Lotus thinkjet printer $400. Gerard (415) 966-1550 (w), (415) 965-9075(H).

Compaq Deskpro II, two floppy drives, 640K ram, 10 mega byte drive $2595; call (213) 851-1891.

IBM-PCXT clone. More bang for your buck. 8 slots, tape back-up, big hard disk. Customized system. Great price. Abacus-PC. (415) 753-1314.

Mac XL-LISA 2/10/MB MacWorks & 7/7 installed $3650 b/o (415) 865-8579.

HARDWARE FOR SALE

Televideo '920' terminal $250, Lear-Siegler Admia terminal $120. Call Terry at (415) 828-4422.

Dec LA36 exc. cond. (415) 587-5605. Decwriter II LA-36 excellent condition $200. (415) 587-5605.

Apple Modem 1200—Almost new. With MacTerminal and connection kit. $400. Call (415) 327-6027.

2400-Baud Modem: Courier 2400/1200/300, new, Hayes-comp. $395. (408) 289-1947.

8" Hard Disk $200 Z-80 CPM sys. $175. 8048 keyboard $15. (408) 720-1640.

Apple 64K System & Software. Numeric keypad & programmable keyboard $590/BO. Lance (415) 467-6909.

Smith Corona Letter Qty. Printers, new $175. Commodor Graphic Printer, new $100 data product color printer, 200 cps new. For $499 nec green monitor, new for $70. Call (408) 248-3020.

Diablo 1650 Heavy-Duty Printer. Excellent condition. Letter quality. Best offer. (415) 339-2420, will ship.

Apple, 2 disk drives, eleven inch green monitor, 80 column card $950 or best, call (714) 840-7704.

IBM-PC Compatible. Sanyo 555-2, 256K, 2DS/DD 360K drives, 1 Amber monitor, printer Epson RX80FT + with cable includes softwares. Call Rene (818) 500-1029.

TRS-80 1 meg ram disk. Model, 1,3,4,4P price is $229 for the first 256K without memory $50 each. Dealer inquiries invited. (213) 874-7137/(213) 874-6932.

Osborne Executive w/complete software plus Qume 5/5/ 5KSR printer $1500. Call Les (408) 438-2778 eves.

IBM-XT, 256K, 2½ height floppys, 40 megabyte hard disk, Hercules graphics card, software, IBM printer. $4500. (818) 788-2826.

HARDWARE FOR SALE

Apple 2 + 64K 2 drive monitor 80-column card. Best Offer. Call John (415) 566-2149.

SERVICES

Cypress Computer Services—Training in Lotus, Word Perfect, MS-Word, dBase III, DOS & Accounting. Quality business or personal instruction. Introduction to PCs. How to link your data & their software. User Friendly instructors! Your site or ours. El Cerrito, Call Carol Kane, (415) 234-7075.

PC Software Trainer/consultant for IBM PC & compatibles. Professional training & custom programming in dBase III, Wordstar, Multimate, Samna, Wordstar 2000 & more. Call M-Pact Consulting (415) 872-1717 for information.

Micro Computer Help! Training, consulting, trouble shooting, programming, selection-hardware. IBM specialists. Los Angeles (213) 556-8728.

Need A Lotus Programmer? Your Lotus 123 package is not just a simple spreadsheet. It is a whole programming language. I can solve your business problems using Lotus 123 Macros. Call Zung (408) 259-3461.

Computer Training. Training classes for IBM (PC & PCjr) & Apple (IIc & Mac) computer users. Lotus, FW, Sym., WS, Mult., Word & more. H&H Microcomputer Crafts, inc. For information (415) 489-1157.

COMPUTER DISK CONVERSIONS
Apple • CP/M • IBM MS-DOS
Minis • Mainframes • Word Processors
Mag Tape • OCR • Typesetting
Pick up • Delivery
GraphiTech
415-897-6006

PERSONALIZED FORM LETTERS are possible and easy using your AppleWorks mailing lists database—and InfoMerge, software for the Apple IIe and IIc which can help you in direct mailing advertising, fund-raising, jobfinding, etc. InfoMerge employs the AppleWorks filecard user interface and has many convenient features. $49.95 (incl. tax) + $2.00 UPS from Anubis Softare, 3020 Bridgeway, #274, Sausalito, CA 94965. Order toll-free by credit card by calling 800-772-2400 extn. 914 or in California 800-772-2666 extn. 914. $10 for the demo disk.

SERVICES

Printer Ribbons Recycled. Send your used printer ribbons to be recycled for 1/2-1/3 new cost. For more info & pricing call (805) 658-7324 or write Golden Ribbons, 2646 Palma Drive, Ste 175, Ventura, CA 93003.

CUSTOM/PRE-SET
Computer forms & checks
in short runs 500-10,000
Call for information
Safeguard Business Systems
(415) 982-9037
Personalized Service

Training in Lotus, Word Perfect, MS-Word, dBase III, DOS & Accounting. Quality business or personal instruction. Introduction to PCs. How to link your data & their software User Friendly Instructors! Your site or ours. Call Carol Kane (415) 234-7075.

SOFTWARE

Public Domain Software—400 volumes; rent and copy $1 each. Send SASE for information, specify IBM, Sanyo, or Commodore: Furtureystems, Box 3040(R), Vista, CA 92083.

SOFTWARE

Real Data, Inc. For Real Estate and Financial Professionals. Over the past 3 years, we have become The Standard. Call/write: 78 North Main St., S. Norwalk, CT 06854. (203) 255-2732.

Wordstar Pro 3.3 $200 (IBM). Multiplan 1.02 $75 (MacIntosh). Both never opened. Call Barbara (415) 343-4773.

Apple Software PFS file, report, graph and more. Also selling good computer books. B/O. John (415) 566-2149.

Terminal Protection—for the price of a disk you can protect your screen from phosphor burn that can permanently imprint your screen. Send $10 pstg, & handling to Terminal Prot, 2100 Beachwood #412, Los Angeles, CA 90068.

Commodore 64 Complete Sya., like new in original boxes, manuals, Gemini 10X printer, video monitor, disk drive, software-2 word process, graphics, game, blank disks $500. (714) 773-9348.

SOFTWARE

Limited number of some of the most popular IBM & Apple software at the lowest possible prices. Lotus, PFS, WS 2000, Word, PC Paint & much more. Call for info. ASAP (415) 489-1157.

Free Math Software, IBM PC. Send DSDD/Disks, mailer, postage to P.O. Box 1303, Cupertion, CA 95015.

Public Domain Software for the MacIntosh. Set of 3 introductory disks plus catalog for $34. Complete catalog of 34 disks—$2. Judy Rosenthal (408) 942-0309.

Latest Software—Mac. We have a collection of the latest Mac S/W for Apple, IBM-Bus, Enter. & Ed. Prompt reply—(415) 343-4658—spec. prices.

Speed Up Computer Input. Learn/review keyboarding/typing. Author has MS in Ed-Psyc, taught bus/typg 22 yrs. Send $4.95 for cassette w/ instructional sheet: Key-tech, 8825 S 84 Ave., Hickory Hills, IL 60457.

WANTED

TV, Servicing Course Wanted! NRI master course in TV, video servicing wanted, also equipment. Incomplete ok!! Also computer courses wanted, NRI, CIE, Heath, etc. reas. write: J. Wegner, Jr., P.O. Box 262, Glendale, CA 91209.

Epson MX80 Printer in excellent condition. Reasonable price. For parallel operation. (415) 948-5253.

IBM Monochrome Monitor-mono printer card or IBM color monitor/color card. Must be IBM. Prefer used & cheap. (415) 359-6412 or (415) 487-7681. Ron.

TV, Servicing Course Wanted. NRI master course in TV, Video servicing wanted, also equipment. Incomplete ok!! Also computer courses wanted, NRI CIE, Heath, etc. Reas. write! J. Wegner, Jr. P.O. Box 262, Glendale, CA 91209.

WILL TRADE

Apple DOS Multiplan with Doc's will trade for sideways with Doc's. Box 2753, Redwood City, CA 94064.

PCJR Tecmar Captain 128K adapter clock softwr swap for IBM 128K extens. (415) 878-4346 eves.

— **Corona Portable,** 128K, 16 bit, with Multimate. MS DOS.; **Zenith Z89,** 48K, 8 bit single disc, includes tutorial, Autoscribe wp software and space invaders game. — **Xerox 1750 Diablo Printer,** letter quality, wide carriage, 40 ch/sec. Best offer. **Telephone: Barbara, (415) 957-0957.**

Easily Retrieve Your File Information

- Search several disks . . . easily
- Search any file type
- Search your documents just as they are
- Search for any word or phrase
- Search files in any format
- Retrieve as much info as you want
- Choose the type of search you want
- Save the results of a search
- Control results & what gets searched

Electra-Find runs on IBM PC and MS-DOS computers. You need 64K RAM with DOS 2.0. Money back guarantee if you're not satisfied. Call or write today!

O'NEILL SOFTWARE
P.O. Box 26111
San Francisco, CA 94126
(415) 398-2255

MICROTIMES CLASSIFIEDS ARE AT YOUR SERVICE

To Place A Classified Ad

Free Ads: Private individuals may have *one* free classified ad of 15 words or less; additional words are 50¢ per word. A phone number, including area code, counts as one word. If you want your ad to run more than once, all subsequent printings will be charged at one half business rates.

Business Ads: Rates are $15 for 15 words or less, 50¢ for each additional word. Again, your phone number counts as one word.

Display Classifieds: Classified ads requiring special treatment (hairlines, all caps, boldface, centering, etc.,) are considered display classified ads. Call Chuck Stanley at (415) 652-3810 or Jeff Rosenfield at (213) 467-7878 for further information.

DEADLINE for classified ads is the 20th of the month *preceding* the issue date (i.e. deadline for the July issue is June 20). Type your ad or print it legibly, using this coupon or a separate piece of paper. BE SURE TO INCLUDE YOUR ADDRESS AND PHONE NUMBER SO WE CAN CONTACT YOU IF NECESSARY. Specify the category you want your ad to run under, and send it with your payment (check, money order, or VISA/MC) to MicroTimes Classifieds, 5951 Canning St., Oakland, CA 94609.

For a mere fraction of your paycheck — buy, sell, trade, whatever. Just $15 for the first 15 words plus 50 cents for each additional word, per issue

Category ☐ Hardware For Sale ☐ Software For Sale ☐ Equipment ☐ Wanted ☐ Services ☐ Will Trade ☐ Video ☐ Employment Offered ☐ Employment Wanted ☐ Personal

Cost of ad _____ X number of issues to run _____ = Amount Enclosed _____

Send check ☐ Money Order ☐
Visa ☐ or MasterCard ☐ Exp. Date _____
Account # _____
Signature _____

Advertisers Name _____
Street Address _____
City _____ State _____ Zip _____
Phone (_____) _____

Send To: MICROTIMES Classifieds 1800 N. Highland Ave. #220 Hollywood California 90028 OR 5951 Canning Street Oakland California 94609

INVENTORY CLEARANCE!

64k Chips . . . . . **from .40 ea.**
128k Chips. . . . . **from 3.50 ea.**
256k Chips. . . . . **from 2.75 ea.**
10MG Tandon Drive . . . . . **$299 ea.**
Xebec Controllers . . . . . **$150 ea.**
WDC Controllers . . . . . **$160 ea.**
X Net Network Boards . . . . . **$150 ea.**
Multifunction Boards . . . . **from $80 ea.**
Digital Research C Basic. **$360**
Microsoft C Compiler **$300**
Microsoft Fortran. **$210**
IBM Color Monitor. **$515**
Freedom 100 Terminals **$350**
Solid Oak Disk Files . . **from $15.95 ea.**

Quantities limited. Subject to prior sale.
Misc. Drives, Boards, etc. Call for more information.

Mon.-Fri. 9-6, Sat. 9-3
Information Systems Inc.

13031 SAN ANTONIO DR. #117 NORWALK, CA 90650
1-800-624-2499 213-929-8891

MONTHLY SPECIALS

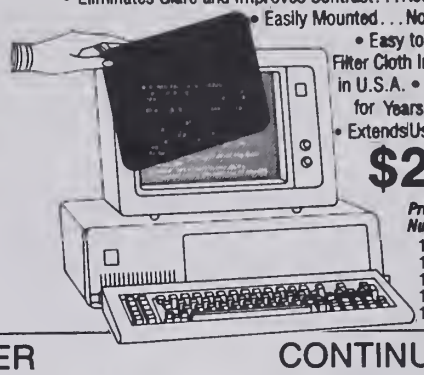
evco
5¼ DATA CASE
$4.95

BOSTON™ CRT ANTI-GLARE FILTER

An inexpensive solution to a glaring problem

- Eliminates Glare and Improves Contrast. . . Reduces Eyestrain
- Easily Mounted. . . No Tools Required
- Easy to Clean—Special Filter Cloth Included • Made in U.S.A. • Durable—Lasts for Years Without Fading
- Extends Useful Life of CRT

$24.95



Product Number	Size (WxH)
1351	8½"x6½"
1352	10⅜"x8"
1353	11⅜"x9"
1354	10⅛"x8¾₁₆"
1355	13"x10⅝₁₆"

COMPUTER PAPER
Also Micro-Perforation
Clean-edge
NCR-multiple parts
All sizes & weights available
Mini Packs
Blue Bar, Green Bar

Ribbons
Print Wheels
Diskettes
Cables
Flip n' Files
Binders

CONTINUOUS
File Cards • Letterheads
Rolodex Cards
Envelopes
P.S. Labels • Invoices
Checks • Statements
Pleading Paper

Paradise

Business Forms and Computer Supplies

We are the source for all of your computer supplies needs and we specialize in Custom Business Forms and Continuous Letterheads

Mon.-Fri. 9-7
Sat. 9-6
(415) 283-6353
3705 Mt. Diablo Blvd. Lafayette, CA 94549

Rent an
'800' LINE

$60 *& up*

Toll Free 800 # Now for your advertising

We will:
Take orders for your products
Dealer Referrals
Literature Request Fulfillment

Nationwide 24 Hours a Day
High Tech Sales Support Our Specialty

'800' Line © 1980

800-772-2666 x10

UPGRADE SPECIALS

MacIntosh:

We can upgrade your 128K Mac to a fat 512K Mac. Our upgrade is guaranteed to be 100% software and hardware compatible. 90 day guarantee on all parts and labor.

$249.95

IBM PC TO XT

Turn your IBM PC into an XT with a 10 Meg Hard Drive. Price includes an upgraded power supply, formatting, and hard disk controller. 90 day guarantee on all parts and labor.

$899.95

On Site Mac Upgrades

We can upgrade your Mac while your at lunch!
Price includes on site upgrade from 128K to 512K, 90 day guarantee on all parts and labor, call for an appointment today.

$349.95

We Have The Lowest Rates in Town!
Electronic Depot Repairs Personal Computers, Printers, Monitors, & VCRs.
90 DAY GUARANTEE ON ALL PARTS AND SERVICE

ELECTRONIC DEPOT

VISA
MasterCard

Personal Computer Repair
700 Mowry Ave.
Fremont, CA 94536

415-796-5950
Hours
Mon.-Fri. 10 AM to 8 PM
Sat. 10 AM to 5 PM

DATA BASE MANAGEMENT

continued from page 72

COMPOUND INDEXING

A Compound Index, one involving two or more key fields joined by a + sign, is trickier. A compound index means that if identical data are found in the *first* of the two named key fields, for any two or more records, then those records will be re-ordered on the basis of data found in the *second* of the two named key fields. The syntax is:

INDEX ON field1 + field2 TO indexfilename

But a compound index involving two different field types will return a *dBase III* error message:

```
.INDEX ON name+number TO namenumb
Data type mismatch
                ?
INDEX ON name+number TO namenumb
```

dBase does not want to create an index of mixed — unmatched — data types. The rule of thumb here is: for a Compound Index of mixed field types, convert all non-character type data to character type data with the appropriate *dBase* Function.

Functions are short, one-word commands which end in a **( )**. They sometimes call for a word or two inside these parentheses. Functions usually convert data from one form or format to another.

The **STR( )** function will temporarily convert our numeric data to character type data. The **STR( )** function wants to see the numeric field's name inside its parentheses, followed by a comma and then the width of the numeric field in the database.

```
.INDEX ON name+STR (number,2) TO
namenumb
.LIST name, number
```

Record #	name	number
2	Able	99
4	Smith	1
3	Smith	50
5	Smith	50
1	Zilch	0

As you see, the three Smiths have been re-ordered on the basis of the data in the Number field.

THE DATE IN COMPOUND INDICES

The **DTOC( )** function will temporarily convert **D**ate type data **TO C**haracter type data for a compound index. It wishes to see the name of the date type field you wish converted inside its parentheses. But if we

```
.INDEX ON name+DTOC(date1) TO namedate
.LIST name,date1
```

Record #	name	date1
2	Able	12/31/99
4	Smith	01/01/85
3	Smith	01/31/85
5	Smith	12/31/84
1	Zilch	01/01/01

we will see that *dBase* has interpreted the character date from left to right in its date re-ordering; within the Smiths, it put 12/31/84 after 01/31/85. This could not be right. There are at least two ways of dealing with this situation.

THE SUBSTR( ) SOLUTION

First, we can force *dBase* to read and index the date data in significant order — first the year, then the month and day — by stringing these two sections or substrings of **DATE1** together, with the **SUBSTR( )** function. Inside its parentheses, the **SUBSTR( )** function wishes to see the name of the item you are trying to string out — in this case **DTOC(date1)** — a comma, the starting position in the field of the substring you wish to consider, another comma, and finally the width in spaces of that substring. The **SUBSTR( )** formula we are using below would make *dBase* read and interpret the character date 01/15/85 as 8501/15. Try to understand this by looking at this command carefully:

```
.INDEX ON name+SUBSTR(DTOC(date1),7,2);
+SUBSTR(DTOC(date1),1,5) TO namedate
.LIST name,date1
```

Record #	name	date
2	Able	12/31/99
5	Smith	12/31/84
4	Smith	01/01/85
3	Smith	01/31/85
1	Zilch	01/01/01

You'll notice that the three Smiths have been re-ordered on the basis of their **DATE1** data.

THE .SET DATE ANSI SOLUTION

Or, secondly, we can take advantage of *dBase III* Version 1.1's **.SET DATE** commands to have all date data treated as being in the ANSI date format — yy.mm.dd — which is the perfect order for date indexing. Let's try this with an index of 3 mixed field types:

```
.SET DATE ANSI
.INDEX ON NAME+STR(NUMBER,2)+
    DTOC(DATE1) TO
NAMNODAT
.SET DATE AMERICAN
.LIST
```

Record #	NAME	NUMBER	DATE1
2	Able	99	12/31/99
4	Smith	1	01/01/85
5	Smith	50	12/31/84
3	Smith	50	01/31/85
1	Zilch	0	01/01/01

The two Smiths with identical **NUMBER** data have been re-ordered on the basis of **DATE1** data.

Each of these methods has its place. You should experiment and become comfortable with both.

MAINTAINING INDICES

Now that we have all these indices floating around, ready to serve us, we must remember to maintain them. To maintain an index is to keep it updated to changes made in the key field data of the database. To do this, we should have all our indices "attached" to the database before we **.APPEND, .DELETE** and **.PACK,** or **.EDIT** the database.

There are two ways to attach all the indices to the database. The lazy man's way is with one long sentence:

```
.USE example INDEX name, number,;
date,namenumb,namedate
```

The other way of attaching indices takes two sentences:

```
.USE example
.SET INDEX TO name,number,date,;
namenumb,namedate
```

Now you may **.APPEND, .DELETE** and **PACK,** or **.EDIT,** knowing that each attached index file will be kept up to date.

THE .REINDEX COMMAND

Having a number of indices attached when you do an **.APPEND** does slow down the append process; there is something to be said for **.USE**-ing a file without any indices attached when you **.APPEND.** When you are done appending, you should attach the index file that interests you with the **.SET INDEX TO,** and follow this with a **.REINDEX.** The **.REINDEX** command uses all the records in the database to re-compute or update the attached index file or files. For example:

```
.USE example
.APPEND
Record No.      6
NAME        Smith
NUMBER      50
DATE1       01/15/85
```

When you arrive at Record No. 7, save your work by hitting the <**RETURN**> key and then,

```
.SET INDEX TO namedate
.LIST name,date1
```

Record #	NAME	DATE1
2	Able	12/31/99
5	Smith	12/31/84
4	Smith	01/01/85
3	Smith	01/31/85
1	Zilch	01/01/01

Notice that the index file is "unaware" of our 6th record because it was not attached when we did the **.APPEND.**

```
.REINDEX
.LIST name,date1
```

Record #	NAME	DATE1
2	Able	12/31/99
5	Smith	12/31/84
4	Smith	01/01/85
6	Smith	01/15/85
3	Smith	01/31/85
1	Zilch	01/01/01

Now the **NAMNUMDA.NDX** knows about the new Record #6, and has placed it correctly within the Smiths.

We can update the rest of the our indices with a:

```
.SET INDEX TO NAME,NUMBER,DATE,
    NAMENUMB
.REINDEX
```

The index file we created after we had **.SET DATE ANSI** must be reindexed separately:

```
.SET INDEX TO namnodat
.SET DATE ANSI
.REINDEX
.SET DATE AMERICAN
```

INDEXED FILE USAGE

An indexed database allows you to use the **.FIND** and **.SEEK** commands to locate specific data in the database. There is no faster way of finding specific data than the **.FIND** and **.SEEK** commands.

Once you have found the first occurrence of some specific data, you may use the **.DISPLAY *WHILE*** or **REPORT FORM...*WHILE*** commands to output that data. There is no faster way of outputting data than with a valid, so-called **WHILE** condition. For example:

```
.USE example INDEX namedate
.FIND Smith
.LIST name,date1 WHILE name = "Smith"
```

Record #	NAME	DATE1
5	Smith	12/31/84
4	Smith	01/01/85
6	Smith	01/15/85
3	Smith	01/31/85

To **.USE** an indexed file, **.FIND** some desired data, and **.LIST WHILE** or **.REPORT...WHILE** that data is in the file, is the fastest way of outputting such information. It is the key to fast data retrieval at the dot prompt or in programs, and we'll look into it in a future column. □

The Winning Combination... from WASAE . . .

Great Prices and Full Service

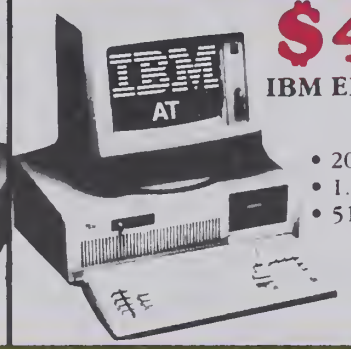
FULL SERVICE & SUPPORT ☐ FACTORY WARRANTY ☐ CONSULTING ☐ CUSTOM DESIGNED SYSTEMS

$2795
IBM PC XT
10 M/B 256K System

- 10 M/B Hard Disc Drive
- IBM 360K Disc Drive
- 256K RAM Memory
- Monochrome Card
- PGS MAX-12 Enhanced Monochrome Monitor

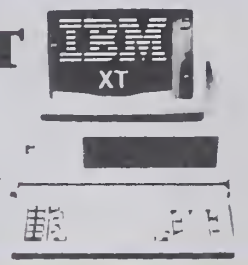
$4295
IBM ENHANCED PC AT

- 20 M/B Hard Disc Drive
- 1.2 M/B IBM Disc Drive
- 512K RAM Memory



$2195
IBM PC XT
GRAPHIC SYSTEM

- 256K RAM Memory
- IBM 360K Disk Drive
- Monochrome Graphic Card
- PGS MAX12 Enhanced Monochrome Monitor



PGS MAX 12-E $169
PGS HX-12 . . . . . $439
PGS HX-12E $495

$1699
Sr.Partner
From Panasonic

- 256K
- Dual Disk Drives
- Graphics Printer
- Monochrome Monitor
- Async Port
- Parallel Port

Includes 7 Most Popular Applications Software

SUPER SAVER

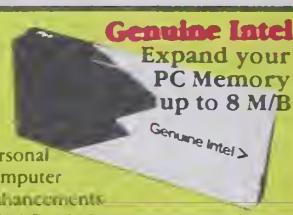
JUKI
LETTER QUALITY PRINTING FOR ONLY:

6000 ~~$229~~ $199
6100 ~~$429~~ $399
6300 ~~$749~~ $699

SUPER SAVER

NEW
5510 ~~$379~~ $429
Dot Matrix, plus NLQ

Genuine Intel
Expand your PC Memory up to 8 M/B



Personal Computer Enhancements
PC M.B. 1010 memory expansion Above Board Card Starting as low as $395

SOFTWARE

ACCOUNTING
BPI
- Accounts Receivable 275.00

SORCIM/IUS
- Accounts Receivable 335.00
- Accounts Payable 335.00
- General Ledger 335.00
- Inventory Control 335.00
- Order Entry 335.00
- Payroll 399.00
- Easy Plus 69.00

COMMUNICATION
MICROSTUFF
- Crosstalk XVI 99.00

DATA BASE
ASHTON-TATE
- dBase II 269.00
- dBase III 369.00
- FrameWork 369.00

SOFTWARE PUBLISHING
- PFS:File 95.00
- PFS:Report 95.00

LANGUAGES
BORLAND
- Turbo Pascal 3.0 49.00
- Turbo Pascal w/8087 69.00

MICROSOFT
- Macro Assembler 125.00
- BASIC Compiler 265.00
- C Compiler 275.00
- FORTRAN Compiler 225.00
- Pascal Compiler 199.00

OPERATING SYSTEMS
IBM
- DOS 2.1 59.00
- DOS 3.0 59.00
- DOS 3.1 59.00
- XENIX CALL

MICROSOFT
- UNIX CALL

SCHEDULING
HARVARD SOFTWARE
- Harvard Project Manager 279.00
- Harvard Total Project Manager 310.00

MICROSOFT
- Project 165.00

PEACH TREE
- Calendar Management 99.00
- Decision Manager 295.00

SORCIM/IUS
- Super Project 239.00

SPREADSHEETS
MICROSOFT
- Multiplan 125.00

SORCIM/IUS
- Supercalc 3 239.00

WORDPROCESSING
LIFETREE
- Volkswriter Deluxe 165.00

MICROPRO
- Wordstar 2000 265.00
- Wordstar Professional 325.00

MICROSOFT
- Word 249.00

SOFTWARE PUBLISHING
- PFS:Write 99.00
- PFS:Write with PFS:Proof 195.00

SORCIM/IUS
- EasyWriter II 239.00

BOARDS

- Genoa Spectrum (mono & color) . . . 349.00
- Genuine Intel (above board) 256K to 8 MB . . . from 399.00
- Scan Doubler Card (for PGS monitor) 175.00
- Mono Design (mono/graphic) . . . 155.00/220.00
- Sigma Maximizer . . . 199.00
- Sigma Color 400 . . . 599.00
- Hercules Color . . . 159.00
- Hercules Mono-Graphic . . . 309.00
- Quadram Quadboard Zero K . . . 229.00
- AST 6 Pack Plus 64K . . . 239.00
- IBM Mono Adapter . . . 215.00
- IBM Color Adapter . . . 210.00

MONITORS

- PGS HX-12 . . . 439.00
- PGS HX-12E . . . 495.00
- PGS Max 12E . . . 169.00
- PGS SR-12 . . . 549.00
- Amdek 310A . . . 169.00
- IBM Mono . . . 240.00
- IBM Color . . . 549.00

CHIPS

- 8087 . . . 130.00
- 80287 . . . 295.00
- 64K . . . 0.75
- 256K . . . 4.29

PRINTERS

- Brother HR 35 . . . 839.00
- Epson FX 80 . . . 359.00
- Epson FX 100 + . . . 499.00
- Epson FX 185 . . . 529.00
- Epson LQ 1500 (with parallel interface) . . . 999.00
- Juki 6100 P . . . 399.00
- Juki 6300 . . . 699.00
- NEC . . . CALL
- Okidata 182 . . . 275.00
- Okidata 192 P . . . 375.00
- Okidata 193 P . . . 510.00
- Toshiba . . . CALL

DRIVES

- TEAC FD 55 BV . . . 85.00
- Winchester Disk Drive 10/20/40 MB (Micro Sci, Tulin, Nippon) . . . $CALL
- Tape Back 10/20/45 MB . . . $CALL

MODEMS

- Hayes Smartmodem 1200B . . . 349.00
- Hayes Smartmodem 1200B with Smartcom II . . . 369.00
- Hayes Smartmodem 1200 . . . 399.00
- Hayes Smartmodem 300 . . . 175.00
- Hayes Smartmodem 2400 . . . 699.00
- Encore 1200B . . . 289.00
- Encore 1200 . . . 329.00

SUPER INTRODUCTORY OFFER

~~$799~~ $699

ENHANCED
OMNI READER
FROM OBERON

Includes:
- Poor Copy Mode
- Can Read 6 Different Typefaces
- Interface Software and Cable

Teach your PC and Macintosh How to Read

CORPORATE & INSTITUTIONAL DISCOUNTS

(408) 435-0555

Ask for our Corporate Sales Group
NET 30-day Terms Available
Leasing & Bank Financing Available at Low Rates

WASAE
COMPUTER CENTERS
WHERE YOU SAVE WITH CONFIDENCE

PRICES GOOD WHILE SUPPLIES LAST

WASAE value enhanced business solutions featuring the IBM-Personal Computers and THE WASAE INVESTMENT ANALYZER.

VISA · MasterCard · TeleCheck

SHOW ROOM • 100 EL CAMINO REAL WEST #80 • MT. VIEW • (415) 967-4400 • SUMMER HOURS TUES-SAT 11AM-6PM

BEST ENGINEERING!
NETWORKING!
TORBOING! VOICE COMMAND!

IBM PC 64K $1349 / IBM XT $1695 / IBM AT $2999

BUSINESS IS BOOMING!

COMPUTERS

IBM PC 64K 1 Floppy	$1349
IBM PC 256K 2 Floppy	Call
IBM PC 256K 2½ HT DR & 10MB HD	2190
IBM XT 256K 2½ HT 10 MB	2390
IBM XT 256K 2½ HT, 20MB HD & 45MB Tape Backup	3870
IBM AT Base	2999
IBM AT w/20MB & 512K Ram	CALL
IBM AT w/50MB & 512K Ram	4999
Sanyo Portable Color w/8 Software	1995
ITT Computer w/256K 2½ HT	1295
ITT Computer w/256K 2½ HT & 10MB	1899
COMPAQ COMPUTERS	CALL

PRINTERS

Toshiba 351	$1250
Juki 6100 P	Call
Juki 6300 P	Call
Epson FX 80	$334.
Epson FX 100	$499.
Brother 15 XL	$359.
Okidata 92 P	$339.
Okidata 93 P	$545.
Toshiba P 1340	$547.
Brother 35 XL	$888.
Abati 18 cpc Letter Quality	$399.
QUME	Call
Rite Man	Call
Star Micronics SG 10	$258.
Star Micronics SG 15	$430.
Star Micronics SD 10	$388.
Star Micronics SD 15	$516.
Star Micronics SR 10	$560.
Star Micronics SR 15	$690.
NEC Printers	Call
Data Products	Call

I.C.

64k RAMS	7.99
8087	$99
80287	$298

BOARDS

Hercules Mono	$315.
Hercules Color	$165.
Vitek color and serial port	$199.
AST 64k/384k	$249./309.
Paradise Modular	$294.
Paradise Multi Display	$344.
Techmar Graphics with PC Paint	$445.
Sigma Maximizer	$215.
Everex Magic	$239.
Everex Graphics	$349.
IBM Mono Card	$219.
Baby Blue	$499.
Techmar Captain 384k	$389.
Sigma Color 400	$590.
PC Peacock	$229.
384K Expansion Card	$145
ORCHID TURBO Board	Call
ALL OTHER BOARDS	Call

MODEMS

Hayes 1200 B/1200	$349./$399.
B12 COM XT with SW	$358.
Carametek 1200 B	$249.
B12 COM B/1200	$349.
Anchor Signalman Express 100% Hayes Compatible	$317

ALL SOFTWARE CHEAPER THAN MAIL ORDER

LEASING ARRANGED UP TO $1 MILLION AT LOW RATES, CAN INTRODUCE YOUR NEW PRODUCTS TO MARKETS. UPGRADE YOUR PRESENT COMPUTERS WITH 10MB PLUS HARD DRIVES. COMPANY P.O. WELCOME. MC/VISA + 3% CASH PRICES SUBJECT TO STOCK ON HAND. OPEN 7 DAYS.

MONITORS

Amdel 310 A	$159
PGS Max 12	$160
PGS Hx 12	$449.
PGS Sr 12	$618.
Quimax Color	$440.
Quimax Mono	$170.
IBM Mono	$249.

DISKETTES

Verbatim SS/DD	$15.00
Verbatim DS/DD	$22.00
Xidex DS/DD	$25.00
Ultra Meganatic SS/DD	$14.99
Ultra Meganatic DS/DD	$19.99
Maxell 96 tpi for AT	$59.00

DRIVES

10 mb Internal	$485.
TEAC	$ 99.
TEAC for AT	$225.
IBM full height 360k	$150.
45 Tape backup	$975.
20 mb hard disc installed	$649.
All hard drives and tape backups	Call
130 W Power Supply	Call

All IBM configurations to your satisfaction We deliver the following configurations...

a) Basic system for starting
b) Enhanced systems with 10 and or 20 mb + tape backup
c) Mono/Color Basic or Graphics
d) Networking
e) Total package for computer aided drafting (CAD)
f) IBM PC, XT or AT with 1-300 stations
g) Computer leasing and rentals
h) Financing available for as low as $100.00 per month on approved credit.

IBM SYSTEM
IBM PC
640K RAM 2 ½Ht. Drives
Mono Card & Mono Monitor

Letter Quality Printer & Cable	$2399
Color System	$2599
Plus 20 MB Hard Drive	$3199

IBM XT
640K RAM
2 Drives

Mono Monitor & Mono Card	$2288
Color System	$2488
Plus 20 MB Hard Drive	$3088

COMPAQ
ALL MODELS
ALL CONFIGURATIONS
LOWEST PRICES IN BAY AREA

ADVANCE
COMPUTER SYSTEMS

SERVICE and SUPPORT backed up by a Manufacturer with a Proven Record of Excellence.

Sunnyvale	665 Grape Ave.	(408) 732-6200
San Jose	715 N. 1st St.	(408) 293-7860
Fremont	39138 State St.	(415)796-4920
San Francisco	690 Market St.	(415) 397-1311
Walnut Creek	1987 No. Main St.	(415) 945-8011